TOPIC DESCRIPTIONS

Topic 1:	Accident Investigation and Reconstruction
General Description:	Accident Investigation and Reconstruction refers to utilization of physical evidence, scientific methodology, and analytical reasoning to obtain detailed knowledge of the chain of events that surround an accident. The processing of accident scenes involves the identification, evaluation, documentation, and collection of evidence. Though most commonly associated with automobile collisions, this topic may involve other types of vehicular crashes, including planes, boats, bicycles, and motorcycles. Non-vehicular accidents, such as slip-and-falls, "freak" occurrences, unintentional shootings, and sport mishaps, are also included in this topic. Consider legal issues such as liability, insurance fraud, driving under the influence, and hit-and-runs. Unlike Forensic Engineering which focuses more on specifically design-related issues, Accident Investigation and Reconstruction contains resources about cause, chronology and consequence of accidents.
Keywords:	Traffic, Pedestrian, Crash, Collision, Brake, Seatbelt, Airbag, Speeding, Misfire, Slip-and-fall, Black box, Driver error, Fault determination, Safety mechanism defects, DWI
May Overlap With:	Forensic Engineering, Explosives, Trace Evidence and its sub-topics, Forensic Pathology

Topic 2:	Arson and Fire Investigation
General Description:	Arson and Fire Investigation relates to the study of fire debris to determine origin and assess damage. In the criminal context this topic usually refers to the crime of using fire setting or explosives to harm property or persons. The legal elements of arson vary among jurisdictions. In the civil context this topic usually relates to either negligence (automobile accident, for example) or product liability (defective appliance design, for example).
Keywords:	Fire pattern, Pyrolysis, Smoldering, Heat transfer, Ignition source, Burn pattern, Spalling, Accelerant, Ignitable, Flammable, Clean burn, Backdraft, Calcinations, Truncated cone, Electrical fire, Fugitive gas, Rekindle, Kindle, Trailers, Incendiary, NFPA 921, Fire tetrahedron, Ignitable liquid residues recovery, Combustion, Explosive
May Overlap With:	Forensic Engineering, Trace Evidence, Explosives, Crime Scene Investigation, Thermal Imaging

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Topic 3:	Biometrics (General)
General Description:	Biometrics refers to the automated identification of an individual based on their behavioral or physiological characteristics. Behavioral characteristics may include signature, gait, and keystroke. Physiological characteristics may include face, retina, iris, hand (including knuckle, palm, vascular), fingerprint (including nail), odor, earlobe, and sweat pore. The recognition process essentially involves three steps: (1) a sensor takes an observation of the behavioral or physiological characteristic (2) the observation is mathematically described as a biometric "signature," and (3) a computer system inputs the signature into an algorithm and compares it against other biometric signatures stored in its database. This form of identification has several applications and, unlike passwords and smart cards, is difficult to loose, observe, forget, share, or duplicate. This technology can be used in banking, retail, military, government, health care and other such contexts where security and access are at issue. NCSTL organized Biometrics into four searchable sections. First there is this one overall, main topic which includes resources about general biometrics. Then there are three additional sub-topics which are based on specific identifying features: (1) Body Scans, (3) Facial Recognition, and (3) Retinal Scans. Please note that a search under this overall topic will not include any of the resources in the three subtopics. In the reverse, a search in the subtopics will not include the resources in the overall topic.
Keywords:	Signature, Gait, Keystroke, Scan, Recognition, Login, Access, Face, Retina, Iris, Hand, Knuckle, Palm, Vascular, Fingerprint, Nail, Odor, Earlobe, Sweat pore, Signature, Enrollment, 1-to-many, Authentication, Template
May Overlap With:	Fingerprints, Smart Cards, Biometrics sub-topics, DNA, Voice Analysis

Topic 4:	Biometrics: Body Scans
General Description:	Biometrics refers to the automated identification of an individual based on their behavioral or physiological characteristics. The Body Scans sub-topic contains resources related to the following types of characteristics: body movement, odor, hands, feet, limbs, and sweat

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	pores. The recognition process essentially involves three steps: (1) a sensor takes an observation of the behavioral or physiological characteristic (2) the observation is mathematically described as a biometric "signature," and (3) a computer system inputs the signature into an algorithm and compares it against other biometric signatures stored in its database. This form of identification has several applications and, unlike passwords and smart cards, is difficult to loose, observe, forget, share, or duplicate. This technology can be used in banking, retail, military, government, health care and other such contexts where security and access are at issue. NCSTL's database also contains sub-topics for resources related to biometrics based on retinal/iris and facial characteristics. Additionally there is one overall, main topic which includes resources about general biometrics. Please note that a search under Body Scans will not include any of the resources in the other two subtopics, nor will it include the resources in the overall topic.
Keywords:	Signature, Gait, Keystroke, Scan, Recognition, Login, Access, Hand, Knuckle, Palm, Vascular, Fingerprint, Nail, Odor, Sweat pore, Signature, Enrollment, 1-to-many, Authentication, Template
May Overlap With:	Fingerprints, Smart Cards, Biometrics topic and sub-topics, DNA, Voice Analysis

Topic 5:	Biometrics: Facial Recognition
General Description:	Biometrics refers to the automated identification of an individual based on their behavioral or physiological characteristics. The Facial Recognition sub-topic contains resources related to the following types of features: earlobes, faces and lip prints. In particular, biometric sensors detect facial characteristics that are less susceptible to alteration such as eye sockets, sides of mouth and cheekbones. The recognition process essentially involves three steps: (1) a sensor takes an observation of the behavioral or physiological characteristic (2) the observation is mathematically described as a biometric "signature," and (3) a computer system inputs the signature into an algorithm and compares it against other biometric signatures stored in its database. This form of identification has several applications and, unlike

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	passwords and smart cards, is difficult to loose, observe, forget, share, or duplicate. This technology can be used in banking, retail, military, government, health care and other such contexts where security and access are at issue. NCSTL's database also contains sub-topics for resources related to biometrics based on retinal/iris and bodily characteristics. Additionally there is one overall, main topic which includes resources about general biometrics. Please note that a search under Facial Recognition will not include any of the resources in the other two subtopics, nor will it include the resources in the overall topic.
Keywords:	Signature, Keystroke, Scan, Recognition, Login, Access, Face, Eye socket, Bone structure, Earlobe, Lip print, Signature, Enrollment, 1-to-many, Authentication, Template
May Overlap With:	Smart Cards, Biometrics topic and sub-topics

Topic 6:	Biometrics: Retinal Scans
General Description:	Biometrics refers to the automated identification of an individual based on their behavioral or physiological characteristics. The Retinal Scan sub-topic contains resources related to retinas and irises. In particular, biometric sensors detect visual characteristics that are less susceptible to alteration such as furrows, rings, freckles, and the corona. The recognition process essentially involves three steps: (1) a sensor takes an observation of the behavioral or physiological characteristic (2) the observation is mathematically described as a biometric "signature," and (3) a computer system inputs the signature into an algorithm and compares it against other biometric signatures stored in its database. This form of identification has several applications and, unlike passwords and smart cards, is difficult to loose, observe, forget, share, or duplicate. This technology can be used in banking, retail, military, government, health care and other such contexts where security and access are at issue. NCSTL's database also contains sub-topics for resources related to biometrics based on facial and bodily characteristics. Additionally there is one overall, main topic which includes resources about general biometrics. Please note that a search under Retinal Scans will not include any of the resources in the other two subtopics, nor will it include the resources in the overall topic.

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Keywords:	Signature, Keystroke, Scan, Recognition, Login, Access, Retina, Iris, Eye, Furrows, Rings, Freckles, Cornea, Signature, Enrollment, 1-to-many, Authentication, Template, Pupil, Lens, Sclera
May Overlap With:	Smart Cards, Biometrics topic and sub-topics

Topic 7:	Bioterrorism
General Description:	Bioterrorism is the intentional use of diseases and or bacteria to cause fear or to cause damage to humans, animals, industry, or agriculture. Related issues include method of infection, prevention, detection, and response. A closely related subject is chemical warfare.
Keywords:	Bioterrorism, Bioterror, Biodefense, Biodefense, Homeland security, Anthrax, Smallpox, Syndromic surveillance, Vaccine, Outbreak, Communicable disease, Public health, Virulence, Virus, Plague, Chemical warfare, Chemical emergency, Chemical terrorism, Germ warfare, Pathogen, Pandemic, Epidemic, Infectious, Disease
May Overlap With:	Explosives, Toxicology, DNA

Topic 8:	Bloodstain Pattern Analysis
General Description:	Bloodstain Pattern Analysis refers to the examination of bloodstain patterns caused by the interaction between physical force and liquid blood. This topic is also referred to as Blood Spatter Analysis. Experts in this field obtain critical information about the creation of stains by reviewing the appearance, quantity and location of the blood. Such information includes: cause of the bleeding, origin of the blood, angle and speed of blood droplets, presence at a particular location, and event sequences. Though most frequently associated with criminal contexts, Bloodstain Pattern Analysis can also play an important role in the reconstruction of accidents.
Keywords:	Spatter, Tear drop, Angle of impact, Point of convergence, Point of hemorrhage, Weapon cast-off, Arterial spurts, Arterial spray
May Overlap With:	Trace Evidence: General, Crime Scene Investigation, DNA, Firearms: General, Accident Investigation and Reconstruction

Topic 9:	Crime Scene Investigation
General	Crime Scene Investigation refers to utilization of physical evidence,

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Description:	scientific methodology, and analytical reasoning to obtain detailed knowledge of the chain of events that surround a criminal action. The processing of crime scenes involves the identification, evaluation, documentation, and collection of evidence. Thus crime scene processing usually involves multiple forensic specialists and types of equipment. Consider issues such as event reconstruction, safe handling of evidence, and chain of custody. This topic contains resources that are more generalized than those under Trace Evidence.
Keywords:	Criminalistics, Evidence, Criminal reconstructionist, Forensic lighting, Forensic photography, Processing, CSI, Evidence, Trace
May Overlap With:	Trace Evidence and its sub-topics, Forensic Anthropology, Entomology, Arson and Fire Investigation, Bloodstain Pattern Analysis, DNA, Fingerprints, Explosives, Firearms and its sub-topics, Digital Image Enhancement, Digital Evidence, Forensic Pathology, Law Enforcement: Vehicles & Personal Equipment

Topic 10:	Cybercrime
General Description:	Cybercrime refers to the use and misuse of computers to commit acts that are prohibited by criminal or civil law. This may include child pornography, gambling and lotteries, phishing, secret malware installation, identity theft, and computer-aided fraud. E-commerce, e-contracts, and general computer-based privacy concerns are categorized in NCSTL's database under Miscellaneous. Discovery and procedural issues related to computer, digital and internet evidence are categorized in NCSTL's database under Digital Evidence.
Keywords:	Internet, Pornography, Online, Phishing, Malware, Virus, Identity theft
May Overlap With:	Digital Evidence, Miscellaneous, Forensic Accounting

Topic 11:	DNA
General Description:	Deoxyribonucleic acid (DNA) is the basic genetic material of most organisms. The DNA structure is a double helix wherein two chains of nucleotides are held together by hydrogen bonds to form a sequence of base pairs. The uniqueness of this sequence allows for identification of the DNA donor. DNA is particularly useful in the forensic context because nearly all human cells contain DNA, and thus it can be extracted from materials

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	such as bodily fluids, body tissue, hair root sheaths, bone marrow, and tooth pulp. Additionally the testing process requires only a small sample and is considered highly accurate. Also DNA is very stable and resists degradation. However DNA is not without its drawbacks. Many people view DNA test results as infallible; a dangerous misconception that ignores the possibility of human error and intentional contamination. Consider issues such as: victim and perpetrator identification, post-conviction DNA testing, admissibility of DNA evidence, parentage determination, constitutionality of sample collection, exoneration, cold case resolution, and identification of serial crimes.
Keywords:	Blood, Saliva, Swab, Semen, Allele, Amplification, Band, Base pair, Sequence, Chromosome, Gel, Genome, Genotype, Locus, Nucleotide, Polymerase chain reaction (PCR), Mitochondrial, Nuclear, Extraction, Sample, Helix, mtDNA, Typing, Enzyme Restriction fragment length polymorphism (RFLP), Marker, Tandem repeat, Electrophoresis, Plasmid
May Overlap With:	Bloodstain Pattern Analysis, Trace Evidence and its sub-topics, Crime Scene Investigation, Forensic Pathology, Forensic Anthropology, Bioterrorism

Topic 12:	Digital Evidence
General Description:	Digital Evidence refers to computerized evidence of acts that are prohibited by criminal or civil law. Such evidence may be found in network servers, laptop computers, desktop computers, and other digital equipment including databases, electronic mail, cameras, pagers, software programs, personal digital assistants. The evidence can be audio, video, photographic, code, or text. Resources under this topic deal with digital equipment as a source of evidence, rather than as an instrument of illegal activity. When searching under Digital Evidence consider issues such as collection, preservation, examination, transfer, and admissibility. The use and misuse of computers to commit acts that are prohibited by criminal or civil law, including child pornography, gambling and lotteries, phishing, secret malware installation, identity theft, and computer-aided fraud, are categorized in NCSTL's database under Cybercrime. E-commerce, e-contracts, and general computer-based privacy concerns are categorized in NCSTL's database under Miscellaneous.

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Keywords:	Cybercrime, Desktop, Computers, Laptop, Network servers, Digital, Cameras, Personal digital assistants, Pagers, Software, Hardware, Programs, Databases, Electronic mail, Hard drive, Disk, Duplicate, Original, Audio, Video, Photographic, Code, Text, Chain of custody
May Overlap With:	Cybercrime, Crime Scene Investigation, Digital Image Enhancement, Forensic Accounting

Topic 13:	Digital Image Enhancement
General Description:	Digital Image Enhancement refers to the alteration of a digital image for the purpose of revealing data that previously was not visible. Computer technology is used to reverse degradation and improve contrast and sharpness by eliminating background colors and patterns. For example, this process may be used to enhance images surveillance video or autopsy photographs. Resources under this topic focus more on the enhancement process than the original image itself. Consider issues such as: capture, storage, processing, analysis, transmission, and output of images.
Keywords:	Image, Imaging technologies, Archive image, Copy, Digital, Duplicate, Original, Primary image, Processed, Working image, Enhancement, Enlargement, Simulation, Animation, Compression, Capture, Legacy File management, Source code, Storage media, File format, Chain of custody
May Overlap With:	Digital Evidence, Crime Scene Investigation, Forensic Odontology

Topic 14:	Entomology
General Description:	Broadly stated, forensic entomology is the study of insects in a legal context. There are three subcategories of this topic. The first is stored products entomology which refers to insect infestations of stored merchandise such as cereals. The second is urban entomology which refers to the impact of insects on the human environment. The third subcategory is medicolegal (or medicocriminal) entomology which refers to the identification and examination of insects that have been collected from or around corpses. Medicolegal entomology is particularly useful in the determination of time and location of death. The first two subcategories are most often related to civil law proceedings while the third is primarily associated with criminal law.
Keywords:	Insect, Bug, Medicocriminal entomology, Zoology, Arthropod, Blowfly, Larvae
May Overlap With:	Forensic Pathology, Crime Scene Investigation

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Topic 15:	Expert Witness Testimony & Malpractice
General Description:	Expert Witness Testimony and Malpractice refers to the use of persons with advanced knowledge and skill in their field in a forensic context. Resources under this topic address three primary perspectives; that of: (1) an expert, (2) the person hiring an expert, and (3) the person opposing an expert's conclusions. Consider issues such as the: expert's qualifications (including education, training and certification), admissibility of expert testimony, consequences of such testimony, and liability incurred by experts.
Keywords:	Education, Training, Certification, Admissibility, Testimony, Daubert, Qualified, Malpractice, Frye, Cross-examination, Preparation, Kelly, Fraud, Perjury, Immunity, Kumho, Joiner
May Overlap With:	Accident Investigation and Reconstruction, Arson and Fire Investigation, Biometrics and its sub-topics, Bioterrorism, Bloodstain Pattern Analysis, Crime Scene Investigation, Cybercrime, DNA, Digital Evidence, Digital Image Enhancement, Entomology, Explosives, Federal/State Laboratories, Fingerprints, Firearms and its sub-topics, Forensic Accounting, Forensic Anthropology, Forensic Engineering, Forensic Linguistics, Forensic Odontology, Forensic Pathology, Forensic Psychology and its sub-topics, Law Enforcement and its sub-topics, Prof Assoc / Board Cert /Institutions, Questioned Documents, Smart Cards, Thermal Imaging, Toxicology, Trace Evidence and its sub-topics, Voice Analysis

Topic 16:	Explosives
General Description:	Explosives refer to the examination of evidence from an explosive device or apparent detonation. The underlying assumption is that the components of the device, even if damaged by the blast, can provide useful information to investigators about the following: (1) construction and discharge of the device, (2) assemblage of the device, (3) actual and intended function of the device, and (4) related trace evidence. This information may be gathered through visual, microscopic and chemical analysis. Explosive evidence may have implications in either the civil or criminal context, depending largely on the intent of the responsible person(s). Consider issues such as natural disasters, structural failures, negligent handling of explosive materials, and criminal/terrorist use of bombs.
Keywords:	Deflagration, Detonate, Fire pattern, Smoldering, Ignition source, Burn

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	pattern, Spalling, Accelerant, Ignitable, Flammable, Clean burn, Backdraft, Incendiary, Ignitable liquid residues recovery, Combustion, Bomb, Blast, Switch, Batteries, Wires, Fuzing systems, Implode
May Overlap With:	Arson and Fire Investigation, Forensic Engineering, Bioterrorism, Toxicology, Crime Scene investigation, Trace Evidence and its sub-topics, Federal/State Laboratories, Accident Investigation and Reconstruction, Thermal Imaging

Topic 17:	Federal/State Laboratories
General Description:	Federal/State Laboratories are facilities that accept, process, and evaluate evidence collected during criminal and/or civil investigations. These laboratories may focus on one area of forensic expertise such as DNA analysis, or they ay operate in a variety of forensic disciplines. Consider issues such as training, standardization, accreditation, regulation, quality control, inspection, accusations of misconduct, and admissibility of expert testimony and reports.
Keywords:	Crime scene, Standards, CSI, Microscopy, Chromatography, Spectrometry, Physical evidence, Accreditation, Tests, Reports
May Overlap With:	Trace Evidence and its sub-topics, Crime Scene Investigation, Toxicology, DNA, Firearms and its sub-topics, Entomology, Forensic Pathology, Forensic Odontology, Forensic Anthropology, Expert Witness Testimony & Malpractice

Topic 18:	Fingerprints
General Description:	In general, print analysis is the examination of impressions left by ridged skin from human palms, fingers and foot soles. Fingerprints refer specifically to impressions left by human fingers. The significance of such impressions comes from their individuality and permanence. Print comparisons can be used to identify individuals, deceased or living. They can establish that someone was present in a particular location, or that someone handled a certain object. The condition and location of prints may also assist in the reconstruction of crime and/or accident scenes. Additionally fingerprints have been used in the security context as passwords. Related issues include methods of print collection, development, and preservation. Privacy concerns also arise from the use of fingerprint databases such as the Automated Fingerprint Identification System (AFIS) and the Automated Latent Print System (ALPS).
Keywords:	Latent, Friction ridge, Finger, Palm, Hand, Feet, Ink, Delta, Core,

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	Loop, Whorl, Arch
May Overlap With:	Trace Evidence: General, Crime Scene Investigation, Biometrics: Body Scans, DNA, Biometrics: General, Digital Image Enhancement

Topic 19:	Firearms (General)
General Description:	Firearms refers to the examination of weapons that use propellants to fire projectiles (usually bullets) at a very high velocity. This topic also includes the study of the fired projectiles. Firearms are most frequently utilized for sport, self-defense, warfare, and criminal purposes. Experts in this field obtain critical information about these weapons and projectiles by reviewing impact patterns, gunpowder residue, projectile paths, and bullet markings. Such information includes: identity of a specific weapon, identity of the shooter, angle and speed of shots, and event sequences. Though most frequently associated with criminal contexts, firearms can also play an important role in the reconstruction of accidents. Other legal issues involve the manufacture, regulation and possession of these weapons. NCSTL organized Firearms into three searchable sections. First there is this one overall, main topic which includes resources that are about both firearms and toolmarks. Then there are two additional sub-topics: (1) Firearms, which has resources solely about firearms, and (2) Toolmarks, which has resources solely about toolmarks. Please note that a search under this overall topic will not include any of the resources in the two subtopics. In the reverse, a search in the subtopics will not include the resources in the overall topic.
Keywords:	Projectile path, Deflection, Keyhole, Toolmark, Ballistic, Bullet wipe, Bullet, Conical, Concentric, Radial and Rib glass fractures, Incident angle, Departure angle, Perforation vs. Penetration, Ricochet, Trajectory, Propel, Deflagration, Powder, Gun
May Overlap With:	Crime Scene Investigation, Trace Evidence: General, Accident Investigation and Reconstruction, Firearms sub-topics

Topic 20:	Firearms: Firearms
General Description:	Firearms refers to the examination of weapons that use propellants to fire projectiles (usually bullets) at a very high velocity. Firearms are most frequently utilized for sport, self-defense, warfare, and criminal purposes.

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	Experts in this field obtain critical information about these weapons by reviewing impact patterns, gunpowder residue, projectile paths, and bullet markings. Such information includes: identity of a specific weapon, identity of the shooter, angle and speed of shots, and event sequences. Though most frequently associated with criminal contexts, firearms can also play an important role in the reconstruction of accidents. Other legal issues involve the manufacture, regulation and possession of these weapons. NCSTL's database also contains another sub-topic for resources related solely to toolmarks. Additionally there is one overall, main topic which includes resources that are about both firearms and toolmarks. Please note that a search under one subtopic will not include any of the resources in the other subtopic, nor will it include the resources in the overall topic.
Keywords:	Projectile path, Deflection, Keyhole, Toolmark, Ballistic, Bullet wipe, Bullet, Conical, Concentric, Radial and rib glass fractures, Incident angle, Departure angle, Perforation vs. penetration, Ricochet, Trajectory, Propel, Deflagration, Powder, Gun, Safety, Trigger, Barrel
May Overlap With:	Crime Scene Investigation, Trace Evidence: General, Accident Investigation and Reconstruction, Firearms topics/sub-topics

Topic 21:	Firearms: Toolmarks
General Description:	Toolmarks refers to the study of unique markings for the purpose of identification. These markings may be created in one of two ways; either when the object is originally made, or when the object comes into contact with another item. For example, markings can be imprinted on a particular object during the manufacturing process. This is the case with footwear tread patterns and tire tracks. Markings may also be imprinted when one object contacts another during its use. For instance, when a knife strikes against bone it leaves behind cuts and scratches. Additionally striations are imprinted on bullets as they fire through a gun barrel. NCSTL's database also contains another sub-topic for resources related solely to firearms. Additionally there is one overall, main topic which includes resources that are about both firearms and toolmarks. Please note that a search under one subtopic will not include any of the resources in the other subtopic, nor will it include the resources in the overall topic.

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Keywords:	Toolmarks, Markings, Imprint, Tread, Patterns, Shoe print, Tire track, Striation, Bullets, Ballistics, Knife, Gun, Tool,
May Overlap With:	Explosives, Arson and Fire Investigation, Trace Evidence: General, Firearms and its sub-topics

Topic 22:	Forensic Accounting
General Description:	Forensic accounting is a specialized field wherein accountants engage in record keeping and analysis that is likely to incur administrative or judicial review. These accountants may either be employed in a preemptive position (for example, provide internal audit services) or in a responsive position (for example, testify about evidence of fraudulent bookkeeping). In the civil context this subject may involve contract disputes, probate valuations, bankruptcies, divorce proceedings, and insurance claims. In the criminal context Forensic Accounting may involve accusations of fraud, laundering, or embezzlement.
Keywords:	White collar, Embezzle, Bankrupt, Contract disputes, Finance, Settlement, Damages, Business valuation, Marital assets, Appraisal, Appraise, Forensic economics
May Overlap With:	Questioned Documents, Digital Evidence, Cybercrime

Topic 23:	Forensic Anthropology
General Description:	Forensic Anthropology refers to the study of skeletal remains to determine identity of the deceased and circumstances of death. Bones are particularly useful in the legal context because they can: (1) resist decay, (2) reflect the deceased's unique characteristics, sex, height, ancestry and age, (3) preserve signs of injury such as knife marks, (4) contain preserved DNA material, and (4) provide the basis for facial reconstruction. Consider contexts such as mass fatalities, missing persons and crime scene reconstructions.
Keywords:	Skeletal, Skeleton, Bone, Skull, Cranial, Facial, Reconstruction, Archeology, Fossil, Stature, Age, Sex, Human osteology, Mass fatalities, Human rights, Race, Mass graves
May Overlap With:	Crime Scene Investigation, Forensic Odontology, Forensic Pathology, DNA

Topic 24:	Forensic Engineering
General Description:	Forensic Engineering refers to the investigation of components, structures, products, or materials that do not operate as originally

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	intended. Therefore this topic focuses heavily on the issues of design and function. Consider issues such as civil liability, tampering and criminal liability, patent infringement, and mass disaster investigation
Keywords:	Crash analysis, Reconstruction, Structural defect, Aeronautical engineering, Civil engineering, Automotive engineering, Applied mechanics, Design
May Overlap With:	Arson and Fire Investigation, Accident Investigation and Reconstruction, Explosives

Topic 25:	Forensic Linguistics
General Description:	Forensic Linguistics refers to the study of language (rather than voice), and its intersection with the law. Thus resources in this topic generally discuss a person's selection of words rather than how a person says those words. Linguistics can refer to written or spoken words. Consider issues such as questionable wills, confession analysis, suicide letters, criminal threats/demands, and the treatment of foreign speaking persons in courts/police stations.
Keywords:	Slang, Interpreter, Dialect, Language, Grammar, Dictionary, Ancient tongue, Sign language, Elocution
May Overlap With:	Questioned Documents

Topic 26:	Forensic Odontology
General Description:	Forensic Odontology refers to the study of dental evidence for identification purposes. Most often the identity of the biter is the issue. Bite mark identification rests on the theory that each person has a unique and distinguishable bite pattern. Whether an expert can identify the biter rests largely on the uniqueness of an individual's dental characteristics and the quality of the bite mark itself. The uniqueness of an individual's dental characteristics is determined by the condition and arrangement of their teeth, and can be preserved in dental impressions. The quality of the bite mark is determined by the manner in which the mark was inflicted, preserved, collected, photographed, and analyzed. Forensic Odontology evidence is primarily associated with criminal law, especially child abuse and physical assault cases. Forensic odontology also refers to identification of persons who die anonymously. This usually involves a comparison of dental records with the decedent's teeth.

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Keywords:	Bite mark, Teeth, Dental, Impression / mold, Forensic dentistry, Overlay, Incisor, Bicuspid, Dentition, Extraoral, Intraoral, Misaligned teeth, Periodontal, Arch, Contusion, Match, X-ray
May Overlap With:	Forensic Pathology, Forensic Anthropology, Digital Image Enhancement

Topic 27:	Forensic Pathology
General Description:	Forensic Pathology refers to the application of medical science to issues and questions related to the legal system. Most commonly this involves the determination of time and cause of death through autopsy. However Forensic Pathology also includes resources about the manner and cause of nonfatal physical injuries. Professionals in this field may provide testimony in criminal and civil law contexts. Consider issues such as the examination, documentation, preservation, analysis, and presentation of medical evidence.
Keywords:	Autopsy, Postmortem, Death investigation, Coroner, Medical examiner, Cause of death, Time of death, Forensic Medicine, Injury, Fatal, Legal medicine
May Overlap With:	Toxicology, Forensic Anthropology, Crime Scene Investigation, Forensic Odontology, Entomology, DNA, Accident Investigation and Reconstruction, Arson and Fire Investigation

Topic 28:	Forensic Psychology (General)
General Description:	Forensic Psychology is the psychological analysis of persons involved in legal proceedings. In the civil context Forensic Psychology may include evaluation and testimony about guardianship, malpractice, civil commitment, mental disability, discrimination, product liability, child custody, and personal injury. In the criminal context Forensic Psychology may include evaluation and testimony about criminal responsibility, drug dependence, death penalty mitigation, sexual disorders, domestic violence, and waiver of Miranda rights. Practitioners in this field consult and treat perpetrators, victims and police officers. Additionally, forensic psychology includes work in the correctional area where psychologists assess inmates for mental illnesses, determine levels of suicide risk, and provide counseling for rehabilitation/treatment purposes. Forensic Psychologists also provide research and testimony about the legal process itself. Consider issues such as mental health legislation, law enforcement training, pretrial publicity, jury selection, repressed memories, children's testimony, and eyewitness testimony.

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	NCSTL organized Forensic Psychology into three searchable sections. First there is this one overall, main topic which includes resources that are about Forensic Psychology and Forensic Psychiatry in general. Then there are two additional sub-topics: (1) Forensic Psychology, which has resources solely about Psychology, and (2) Forensic Neuro-Psychology, which has resources about Neuro-Psychology and Neuro-Psychiatry. Please note that a search under this overall topic will not include any of the resources in the two subtopics. In the reverse, a search in the subtopics will not include the resources in the overall topic.
Keywords:	Competency, Behavioral analysis, Civil commitment, Guardianship, Forensic interview, Personality disorder, Psychosis, Malpractice, Mental, Treatment, Jury selection, Eyewitness testimony, Repressed memories Pretrial publicity, Children's testimony, Battered woman syndrome, Criminal responsibility, Drug dependence, Death penalty mitigation, Domestic violence, Waiver of Miranda rights, Development, Trauma, Road rage, Post traumatic stress disorder, Psychiatry
May Overlap With:	Forensic Psychology: Neuro-Psychology, Voice Analysis

Topic 29:	Forensic Psychology: Forensic Psychology
General Description:	Forensic Psychology is the psychological analysis of persons involved in legal proceedings. In the civil context Forensic Psychology may include evaluation and testimony about guardianship, malpractice, civil commitment, mental disability, discrimination, product liability, child custody, and personal injury. In the criminal context Forensic Psychology may include evaluation and testimony about criminal responsibility, drug dependence, death penalty mitigation, sexual disorders, domestic violence, and waiver of Miranda rights. Practitioners in this field consult and treat perpetrators, victims and police officers. Additionally, forensic psychology includes work in the correctional area where psychologists assess inmates for mental illnesses, determine levels of suicide risk, and provide counseling for rehabilitation/treatment purposes. Forensic Psychologists also provide research and testimony about the legal process itself. Consider issues such as mental health legislation, law enforcement training, pretrial publicity, jury selection, repressed memories, children's testimony, and eyewitness testimony. This sub-topic is very similar to the overall, main topic. The difference is that the overall, main topic also includes information about Forensic Psychiatry.

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	NCSTL's database also contains another sub-topic for resources related to Forensic Neuro-Psychology and Forensic Neuro-Psychiatry. Please note that a search under one subtopic will not include any of the resources in the other subtopic, nor will it include the resources in the overall topic.
Keywords:	Competency, Behavioral analysis, Civil commitment, Guardianship, Forensic interview, Personality disorder, Psychosis, Malpractice, Mental, Treatment, Jury selection, Eyewitness testimony, Repressed memories Pretrial publicity, Children's testimony, Battered woman syndrome, Criminal responsibility, Drug dependence, Death penalty mitigation, Domestic violence, Waiver of Miranda rights, Development, Trauma, Road rage, Post traumatic stress disorder
May Overlap With:	Forensic Psychology: Neuro-psychology, Voice Analysis

Topic 30:	Forensic Psychology: Neuro-Psychology
General Description:	Forensic Neuro-Psychology is the neuro-psychological analysis of persons involved in legal proceedings. Neuro-psychology is the study and treatment of suspected and known brain disorders. In the forensic context neuro-psychologists provide information in civil or criminal cases involving brain damage, dementia and intellectual function. Forensic Psychologists also provide research and testimony about mental health legislation and policies. This sub-topic includes resources about the related field of Forensic Neuro-Psychiatry. NCSTL's database also contains another sub-topic for resources solely related to Forensic Psychology. Additionally there is one overall, main topic which includes resources that are about Forensic Psychology and Forensic Psychiatry in general. Please note that a search under one subtopic will not include any of the resources in the other subtopic, nor will it include the resources in the overall topic.
Keywords:	Brain-behavior, Head Injury, Retardation, Dementia, Intellectual function, Testing, Development, Malpractice, Civil commitment, Guardianship, Forensic interview, Mental, Trauma, Treatment, Psychoactive, Cognitive, Memory, Concentration, Motor skills, Halstead-Reitan, Luria-Nebraska, Cerebral, Cerebrum, Psychiatry
May Overlap With:	Forensic Psychology: General, Forensic Psychology: Neuro-Psychology, Voice Analysis

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Topic 31:	Law Enforcement: Communications & Interoperability
General Description:	Law Enforcement: Communications & Interoperability refers to communication and coordination efforts among multiple law enforcement, governmental and rescue personnel agencies. This includes both state and federal agencies. Specific issues and related concepts include information-sharing, national databases, emergency response systems, standardization of police techniques, developments in multi-agency telecommunications, multi-jurisdictional investigations, and national criminal research centers.
Keywords:	Communication, Multi-agency, Police, Coordination, Rescue personnel, Information-sharing, Databases, Emergency response systems, Standardization, Telecommunications, Multi-jurisdictional, Equipment, Training.
May Overlap With:	Law Enforcement: Vehicles & Personal Equipment, Bioterrorism, Cybercrime

Topic 32:	Law Enforcement: Vehicles & Personal Equipment
General Description:	Law Enforcement: Vehicles & Personal Equipment refers to vehicular and personal equipment that law enforcement personnel can use to perform their jobs safely and effectively. This includes weaponry, ammunition, uniforms, software, hardware, restraints, in-car cameras, armor, and related training. Legal issues may include impersonation of a police officer, wrongful death, product liability, and police brutality. This topic does not generally include equipment used for evidence collection and analysis. Such resources may be found under Federal / State Laboratories, Crime Scene Investigation, and Trace Evidence and it sub-topics.
Keywords:	Firearm, Taser, CCTV, Equipment, Police Car, Handcuffs, Weaponry, Ammunition, Stun-gun, Uniforms, Software, Hardware, Restraints, In-car cameras, Armor, Training
May Overlap With:	Law Enforcement: Communications & Interoperability, Firearms

Topic 33:	Miscellaneous
General Description:	Miscellaneous refers to resources that do not belong under any of the other listed topics. For instance it includes information about less familiar forensic fields such as: nursing, photography, botany, art, palynology, podiatry, gynecology, and lighting.

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	This topic also contains resources that are more tangentially related to science, technology and the law. This includes scent detection, E-commerce, computer-based privacy concerns, eyewitnesses, nanotechnology, and health care, among others. More generalized subjects are incorporated as well, including: youth safety, crime statistics, capital cases, criminalistics, investigative sciences, and historical and social perspectives.

Topic 34:	Prof Assoc / Board Cert / Institutions
General Description:	Prof Assoc / Board Cert / Institutions refers to professional associations, board certifying bodies and institutions that are involved in science, technology and / or the law. Unlike agencies, these groups are not usually affiliated with a governmental entity. Typically these are private organizations operated by and for professionals in a particular discipline. They commonly produce publications, sponsor conferences, offer continuing education, and establish standards for their respective fields.
Keywords:	Certification, Membership, Standards, Testing, Association, License, Group, Organization
May Overlap With:	Accident Investigation and Reconstruction, Arson and Fire Investigation, Biometrics and its sub-topics, Bioterrorism, Bloodstain Pattern Analysis, Crime Scene Investigation, Cybercrime, DNA, Digital Evidence, Digital Image Enhancement, Entomology, Explosives, Federal/State Laboratories, Fingerprints, Firearms and its sub-topics, Forensic Accounting, Forensic Anthropology, Forensic Engineering, Forensic Linguistics, Forensic Odontology, Forensic Pathology, Forensic Psychology and its sub-topics, Law Enforcement and its sub-topics, Prof Assoc / Board Cert /Institutions, Questioned Documents, Smart Cards, Thermal Imaging, Toxicology, Trace Evidence and its sub-topics, Voice Analysis

Topic 35:	Questioned Documents
General Description:	Questioned Documents refers to the study of handwritten or electronically produced documentation. Examiners in this field use light sources, optical instrumentation, digital enhancement, and known samples to determine authenticity and authorship of challenged documentation. For example, examiners may conclude that a specific person wrote a specific letter; or they may establish that two letters were written by the same person. Consider issues such as disputed wills, confessions, suicide notes, and

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	threats. The safe handling of questioned documents is critical because they may also provide fingerprint, DNA, or trace evidence.
Keywords:	Forgery, Known writing, Distortions, Character, Natural writing, Script, Font, Text, Penmanship
May Overlap With:	Forensic Linguistics, Digital Evidence, Digital Image Enhancement

Topic 36:	Smart Cards
General Description:	Smart Cards are programmable plastic cards embedded with a very small computer chip. Smart Cards are about the size of a credit-card and have many potential applications. For example, they can store identifying information and passwords, thus making them valuable in the following contexts: banking, medicine, voting, telecommunications, security, and mass transit.
Keywords:	Computer chip, Digital authentication, Card-computer, Card readers, Security, Privacy
May Overlap With:	Fingerprints, Digital Evidence, Biometrics and its sub-topics

Topic 37:	Thermal Imaging
General Description:	Thermal imaging is the creation of images based on heat rather than light. The imaging process involves the recordation of infrared radiation, which increases with temperature. This technology can be used to detect hot spots in wiring and cool spots in insulation. Thermal imaging also helps to locate persons in situations where visibility is reduced by darkness, smoke or poor weather conditions. Additional applications include: drug laboratory and greenhouse detection, military uses, emergency response, search and rescue, and surveillance.
Keywords:	Forensic photography, Night vision, Thermography, Infrared, Ambient light condition, Radiation, Heat detection
May Overlap With:	Biometrics: Body Scans, Digital Image Enhancement, Digital Evidence, Arson and Fire Investigation, Explosives

Topic 38:	Toxicology
General Description:	Toxicology refers to the study and examination of drugs and their metabolites as found in biological tissues and fluids. Experts in this field provide services in three main areas: (1) human performance cases wherein persons are suspected of acting under the influence of alcohol / drugs, (2) postmortem cases wherein toxicology test results

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	aid death investigations, and (3) workplace testing wherein job-related testing for alcohol / drugs is mandated. Other related issues include poisoning, drug-facilitated sexual assaults, possession and use of illegal substances, medical malpractice, and product tampering.
Keywords:	Drugs of abuse, Pharmacological, Pharmacokinetic, Intoxication, Alcohol, Drug, Toxin, Hair analysis, DWI, DUI, Under the influence, Controlled substance
May Overlap With:	Trace Evidence: Hair, Forensic Pathology, Federal/State Laboratories, Bloodstain Pattern Analysis

Topic 39:	Trace Evidence (General)
General Description:	Trace Evidence refers to physical evidence that, because of its texture or size, is easily transferable from one location to another. The word "trace" can be misleading because such evidence may be found in both large and microscopic amounts. Types of trace evidence include fire and explosive debris, biological substance, residue, fiber, glass, hair, and paint. Consider issues such as collection, preservation, and use in scene reconstructions. NCSTL organized Trace Evidence into five searchable sections. First there is this one overall, main topic which includes resources about trace evidence in general. Then there are three additional sub-topics which each focus solely on specific types on evidence. These sub-topics are: (1) Fibers, (3) Glass, (3) Hair, and (4) Paint. Please note that a search under this overall topic will not include any of the resources in the four subtopics. In the reverse, a search in the subtopics will not include the resources in the overall topic.
Keywords:	Criminalistics, Crime scene, Microscopic, CSI, Physical evidence, Debris, Fiber, Glass, Hair, Paint, Microscopy, Transference, Locard's exchange principle
May Overlap With:	Crime Scene Investigation, Explosives, Arson and Fire Investigation, Fingerprints, DNA, Bloodstain Pattern Analysis, Firearms and its sub-topics, Federal/State Laboratries, Entomology, Toxicology, the Trace Evidence sub-topics, Accident Investigation and Reconstruction

Topic 40:	Trace Evidence: Fibers
General Description:	Trace Evidence refers to physical evidence that, because of its texture or size, is easily transferable from one location to another. The word "trace" can be misleading because such evidence may be found in both large and microscopic amounts.

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	Trace Evidence includes fibers, which have two primary forensic applications. First the condition, pattern and location of fibers may assist in the reconstruction of crime and/or accident scenes. Second the composition of a fiber reveals its origin, thereby connecting persons, property and events. Related issues include direct and indirect transference, ability of the donor and recipient garments to shed and retain fibers, and time between contact and collection. NCSTL's database also contains three additional sub-topics for other kinds of specific trace evidence, including: (1) Glass, (2) Hair, and (3) Paint. Additionally there is one overall, main topic which includes resources about trace evidence in general. Please note that a search under Fibers will not include any of the resources in the other three subtopics, nor will it include the resources in the overall topic.
Keywords:	Criminalistics, Crime scene, Microscopic, CSI, Physical evidence, Debris, Textile, Microscopy, Transference, Sheddability, Fibrous, Fiber twist, Elongation, Pleochroism, Chromatography, Cordage, Weave, Fabric, Pigment, Polymer
May Overlap With:	Crime Scene Investigation, Federal/State Laboratries, the Trace Evidence topics/sub-topics, Accident Investigation and Reconstruction

Topic 41:	Trace Evidence: Glass
General Description:	Trace Evidence refers to physical evidence that, because of its texture or size, is easily transferable from one location to another. The word "trace" can be misleading because such evidence may be found in both large and microscopic amounts. Trace Evidence includes glass, which has two primary forensic applications. First the condition, pattern and location of glass fragments may assist in the reconstruction of crime and/or accident scenes. Second the elemental composition of glass reveals its origin, thereby connecting persons, property and events. Related issues include direct and indirect transference, as well as time between contact and collection. NCSTL's database also contains three additional sub-topics for other kinds of specific trace evidence, including: (1) Fibers, (2) Hair, and (3) Paint. Additionally there is one overall, main topic which includes resources about trace evidence in general. Please note that a search under Glass will not include any of the resources in the other three subtopics, nor will it include the resources in the overall topic.
Keywords:	Criminalistics, Crime scene, Microscopic, CSI, Physical evidence, Debris, Microscopy, Transference, Spectrometry, Elements, Pigment

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May Overlap With:	Crime Scene Investigation, Federal/State Laboratries, the Trace Evidence topics/sub-topics, Accident Investigation and Reconstruction

Topic 42:	Trace Evidence: Hair
General Description:	Trace Evidence refers to physical evidence that, because of its texture or size, is easily transferable from one location to another. The word "trace" can be misleading because such evidence may be found in both large and microscopic amounts. Trace Evidence includes hairs, which have two primary forensic applications. First the condition and location of hairs may assist in the reconstruction of crime and/or accident scenes. Second visual and microscopic analysis of hair may reveal its origin, thereby connecting persons, property and events. Biochemical analysis may also provide DNA and toxicological results. Related issues include direct and indirect transference, transferability and retention of hair, human versus animal hairs, and time between death and collection. NCSTL's database also contains three additional sub-topics for other kinds of specific trace evidence, including: (1) Fibers, (2) Glass, and (3) Paint. Additionally there is one overall, main topic which includes resources about trace evidence in general. Please note that a search under Hair will not include any of the resources in the other three subtopics, nor will it include the resources in the overall topic.
Keywords:	Criminalistics, Crime scene, Microscopic, CSI, Physical evidence, Debris, Microscopy, Transference, Anagen, Catagen, Cotex, Cortical, Cutical, Medulla, Follicule, Keratin, Banding, Root, Shaft, Trichology, Pigment
May Overlap With:	Crime Scene Investigation, Federal/State Laboratries, the Trace Evidence topics/sub-topics, DNA, Toxicology

Topic 43:	Trace Evidence: Paint
General Description:	Trace Evidence refers to physical evidence that, because of its texture or size, is easily transferable from one location to another. The word "trace" can be misleading because such evidence may be found in both large and microscopic amounts. Trace Evidence includes paint, which has two primary forensic applications. First the condition and location of paint may assist in the reconstruction of crime and/or accident scenes. Second visual, microscopic and chemical analysis of paint may reveal its origin, thereby connecting persons, property and events. Such evidence is

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	particularly useful in motor vehicle identification. Related issues include transference, collection, and preservation. NCSTL's database also contains three additional sub-topics for other kinds of specific trace evidence, including: (1) Fibers, (2) Glass, and (3) Hair. Additionally there is one overall, main topic which includes resources about trace evidence in general. Please note that a search under Paint will not include any of the resources in the other three subtopics, nor will it include the resources in the overall topic.
Keywords:	Criminalistics, Crime scene, Microscopic, CSI, Physical evidence, Debris, Microscopy, Transference, Coating, Pigment, Varnish, Lacquer, Contaminants, Weathering, Polymer, Spectrometry, Motor vehicle identification
May Overlap With:	Crime Scene Investigation, Federal/State Laboratries, the Trace Evidence topics/sub-topics, Accident Investigation and Reconstruction

Topic 44:	Voice Analysis
General Description:	Voice Analysis is the study of speech for purposes not related to linguistics. Simply stated, voice analysis refers to how words are spoken rather than which words are spoken. Voice analysis can be used to identify a person, determine a speaker's mental or emotional state, or aid in diagnosis of medical conditions. Consider issues such as verbal confessions, polygraphs, threats, and demands.
Keywords:	Polygraph, Audio enhancement, Playback, Audio tapes, Wiretaps
May Overlap With:	Forensic Linguistics, Digital Evidence, Forensic Psychology and its sub-topics