Animal CSI: 
Forensic Investigation 
of Animal Cruelty

Dr. Melinda Merck
Senior Director of Veterinary Forensic Sciences, 
ASPCA

catdvm@bellsouth.net
678-773-8014
www.veterinaryforensics.com
INVESTIGATING ANIMAL CRUELTY CASES: How is it different?

- Mute Victim
- Usually no witness
- Different types of evidence
- Animal is both the victim and evidence
- Lack of knowledge for proper investigation, evidence collection and analysis
Animal Crime Scene Investigation

- Key to success of any investigation and prosecution
- New field – requires education and training
- Veterinarian involvement is critical
- Veterinarians are the experts in animal behavior and response to pain and fear
- Must know the laws - burden of proof
Future Trends and Issues in Veterinary Forensics
DMX

Michael Vick
Dream Team Defenses
Seized Animals – What to Do?

- Public perception
- Public risk
- Due diligence
  expected
Hurricane Katrina
Increased Awareness = Increased Action

- 11+ states with mandatory reporting requirements for veterinarians
- Cockfighting now banned in all 50 states
- More State felony laws
- Federal felony laws
Getting the “Link”

- TPO for animals
- Cross-reporting
- LE: thinking
  “outside the box”
- ↑ Reporting
- ↑ Investigation
- ↑ Prosecution
Result: Need More Forensics!

- Burden of proof higher
- More scrutiny on cases
- Need it regardless if confession
- Have to anticipate defenses
- Need to have more help from the veterinary professionals
- Most defendants plea
Issues...

- Veterinary labs – interpretation of results on their reports
- Crime labs – animal evidence testing?
- Affordability of tests, experts
- Veterinarian’s as Advisors: early in the investigation
- Communication with prosecutor – reports, case strategy
Educational Resources

- www.aspcapro.org
- Conferences – veterinary, animal control
- Veterinary Forensics Symposium – Annual Event in Orlando, Florida
  Sponsored by Maples Center for Forensic Medicine at University of Florida and ASPCA
Education and Training

- Support from the human forensic field
- Vet Forensic Science - Crime Scene/Bite Mark
- www.conferences.dce.ufl.edu/vetforensics
- International Veterinary Forensic Science Assoc.
Education and Training

- Veterinary Conferences – lectures and labs
Available at www.aspca.org
Veterinary Forensics Service
ASPCA

• Service to assist investigators, veterinarians, law enforcement and prosecutors on animal cruelty cases
• Randall Lockwood, PhD and Melinda Merck, DVM
• ASPCA Anti-Cruelty Initiatives and Legislative Services
• ASPCA National Outreach
• ASPCA Disaster Response Team
On-Scene Assistance
ASPCA Anti-Cruelty Institute
Anti-Cruelty Institute

- Treatment center for NY victims of abuse
- Forensic research/lab
- Educational center
- Data collection resource center
- Training center – vets, investigators, CSI, techs
- More Mobile Animal CSI Units
Veterinarian’s Role

- Crucial in animal cruelty cases
- Need to be at the scene or at a minimum evaluate crime scene findings and photos
- Veterinarian’s perspective is needed to identify evidence and determine significance of findings
- Assist in the investigation and prosecution strategies
- Vets vs. LE in court…
Working with Vets

- Investigators must communicate crime scene findings and info re: case
- Must know what tests should be done and direct the veterinarians
- Problems with vets
Animal Forensics: What do we need to prove?

- Was there a crime?
- When crime occurred?
- Where crime occurred?
- How long animal suffered?
- Who committed the crime?
- Was there intent?
Animal CSI:

- There are two crime scenes:
  - Macro crime scene – primary environment where the crime took place, secondary environments (transport, body dump)
  - Micro crime scene – the body of the animal
Animal Cruelty Forensic Kit for Veterinarians/Investigators
www.tritechusa.com
800-438-7884, 910-457-6600
Chain of Custody

- Maintaining a constant account of all evidence
- Failure of COC = Reasonable Doubt
- Evidence: any item from crime scene or animal, samples, photos and the body
- Proper labeling: content, date, time, collector’s name and signature
- Secure storage
- All people in COC subject to appear in court
- Forms on www.veterinaryforensics.com
CSI: THE ENVIRONMENT

- Environment holds key evidence
- Veterinarian on scene
- Photography - keep things as found
- Pictures of: general, housing, animal, insects, food/water, medications, bodily fluids, feces, weapons
- Videography – back up for photography;
- Provides: audio of animals; weakness, limping, response to food/water; more accurate portrayal
Photographs

- Need to show full animal, identifying marks, animal/case ID
- Lesions, evidence of abuse/suffering
- Distant and clear close-up views of scene/animal
- Case #/date in first photo
- Photo of scene w/address
- Digital camera best—immediately know quality
- Keep negatives; convert digital to CD
- Photo log
Photography cont.

- Photograph surroundings, residence, identifying factors of the residence…
- Where animal(s) kept, environment, the animal (face, sides, top)…
- Items of evidence, food, water…
- Everything documented in your notes
Animal CSI: Environment

- Looking for evidence of a crime or multiple crimes – think outside Animal Welfare Act
- Often have neglect associated with any type of cruelty = additional charges, intent
- Important to look for what is missing as well as what is present
Essential Environment Assessments:

- Water – on or off
- Electricity, gas
- Time and Temp - Thermometer
- A/C, heat – on or off?
- Last setting of A/C or heat
- Important: When did last someone last see the animal alive?
ASSESSING THE SCENE:
LOOKING FOR EVIDENCE

- Need to assess evidence considering animal behavior
- Animal behavior influenced by: age, species, breed, sex, intact or not
- Need to consider what animal would do when fearful, in pain
- Forensic testing
• Presence or lack of food – dating on food
• Appropriate food – puppy or kitten?
• Water – availability, quality
• Shelter
• Unsanitary conditions
• Urine or feces – condition of feces, lack of feces, old/fresh
• Veterinary records – help or hurt?
• Medications – used, unused
• Presence/lack of puppies or kittens
Search Warrant/Subpoena for Veterinary Records

- All written and electronic records
- All laboratory tests and results
- All invoice and payment records
- All radiographs
- All ultrasound pictures and findings
- Any other procedures or tests and results
- Any communication to or from client
- Any paperwork pertaining to client and/or patient
- Note: patient may be under different owner name-friends, relatives – at same or different address
- Weight of the chain
- Length of tether, chewed on
- Collar: loose (due to wt loss?), tight
- Preserve knots, save all as evidence
- Note what else dog was chewing on
• Note the condition of the feces: firm, diarrhea, moldy, fresh
• Look for evidence of pica (eating non-nutritional items) which occurs with starvation or boredom
• Collect first bowel movement of impounded animals to look for pica
• Recently disturbed earth- buried bodies, evidence; flies/maggots on soil
• Evidence to indicate how long animal has been confined, in that area or in that condition
• Any poss weapons, poss poisons
• Medications – vet’s name, hosp, animal’s name, date of Rx, expiration
• Papers related to animals- adoption, rescue, kennel, vet invoices, receipts
• Consider DNA: collect toys, bowls, brushes, combs, bedding
What evidence do you see and what does it mean?
Bed of truck
• No shelter
• Animal wet, filthy, long nails
• In with gas can – full?
• Very short tether, could hang himself if jumped out (measure distance to ground)
• Evidence of chewing from top wooden rails down to the bottom
• Feces covering bed of truck
• Evidence of defecation before and after rain
• Wood chip/fragments on top of feces
• Due to short tether dog cannot get away from the urine and feces so constantly standing in it
• How long been in there?
PROCESSING THE CRIME
SCENE: THE ANIMAL

- The animal is *evidence* - chain of custody needs to be preserved
- Never freeze the body – only refrigerate until necropsy performed
Document demeanor of animal *at the scene* because it changes
CSI: The Deceased Animal at the Scene

- Need to maintain integrity of evidence: fiber, hair, fluids, DNA
- Assess body for: rigor-where?
- Look for wounds-determine weapon for search warrant
- Take recordings to determine TOD
Trace evidence may be embedded in the fur, collar or tether.

Consider behavior of injured animal which licks at the injuries or when stressed.

Wrap the body, bag the feet.
Poisoning

- Any substance can be toxic if high enough quantities
- Consider poisoning may have been gradual vs. acute, run-off
- Need observed symptoms, bloodwork
- Sample handling and submission is critical – avoid contamination
- Unknown toxin: histopathology can provide clues
- Environment holds the key
- Evaluate photos
- Submit sample of suspected poison
BLOOD EVIDENCE

- Note location in environment, related to animal, blood on objects; consider behavior
- Photograph with scale, then swab/collect
- Measure in relation to objects, draw diagram;
- Human or animal? Presumptive blood tests
• Take measurements of animal for bloodstain pattern analysis

• Take measurements to wounds
• Passive drops: Low Velocity – from the force of gravity alone – circular to elongated; scalloped edges indicating direction of travel
• Projected: Medium/High Velocity - when a blood source is subjected to a force greater than the force of gravity
• Arterial blood spurt, blunt force (impact, weapon cast-off); gunshot – high velocity
• Expirated blood – from nose or mouth; air vacuoles that pop creating “ghost” centers, darker perimeter stain
Hidden Blood Evidence

- Luminol – mix chemicals prior; causes blood to fluoresce for very short time; must be completely dark to see; must be ready for photograph; can degrade DNA; after spray have to wait 30 minutes before spray again

- Blue Star – 2 tablets mixed with 4oz of distilled water; can mix at the scene; fluorescence lasts much longer; does not have to be completely dark; does not degrade DNA; can re-spray immediately; can react to lead in paint and get false fluorescence
Animal DNA Forensic Testing

- Animal DNA unique to individual animal
- DNA, mitochondrial DNA, sex, parentage, breed?
- DNA may become important later in case; always take samples/buccal swabs (Veterinary Genetics Lab at UC Davis, California)
- Sources: same as humans plus **urine**
- Costs: $100-300 depending on test, number of samples; call first to discuss case
Dead-End Cases?
Additional Evidence and Testing

- Weight from barbell
- Wood chip fragments
- Collected DNA
- Police Detectives organize door-to-door
Snellville Police – Highly Unusual Crime Scene

- 2 dogs missing; blood evidence in yard; large amount of blood found around dog houses; gates shut;
- Owner claims he came home and dogs were not in the back yard; he started looking for them; called his in-laws to come over and help look for the dogs
- Owner claims next door neighbor shot his dogs and got rid of the bodies; owner found 2 bullet casings (9mm) side by side on the outside of his privacy fence
- Previous year, claimed same neighbor fatally poisoned his cat and dogs (police ruled out neighbor)
Security Videos with Audio-Motion Activated

- Car drives up, dogs do not bark; no outside lights turned on after person gets out of car
- Hear one dog bark a few times (non-distressed) 5-10 min later (NO other dogs in neighborhood), then never hear dogs again
- Appx 40min later, another car drives up, still no outside lights, hear trunk pop open
- See flashlight beams in stream area; see figures cross to car and hear trunk shut and 2nd car leaves; initial car never leaves
- 1 hr later, calls police; 20 min of video missing; no audio other than the one dog bark
Conclusion:

- Staged crime scene; suspect owner killed dogs (were his wife’s dogs) and tried to frame neighbor.
- Blood stain patterns on fence inconsistent with dropping the body over.
- His story does not match his own security videos (never calls for his dogs, no talking on video).
- Impossible for someone to shoot 2 moving dogs in the dark and fatally wound both; then unlikely the shooter would then crawl over the privacy fence to then remove the dogs (no gunshot on video/audio).
How to Prove Intent

- Knowledge of conditions, injuries
- Vet records – knowledge of medical conditions
- Witness statements
- Timelines
- Implied Malice
Proving Timelines

- Timelines important to prove when crime occurred, length of animal suffering, intent
- Look at mail
- Utilities - turned off?
- Paperwork when acquired animal
- Estimate length of injury/illness
- Time for healing: granulation tissue, bed=7d, grows 1mm/day, slows to 1cm/month
- Time of Death determination
Time Of Death

- Not exact science
- Environmental conditions must be recorded
CRUCIAL FIRST STEPS FOR DECEASED ANIMALS:

- Take temp of environment, record time; windy, precip
- Special thermometers - $16-20
- Rectal temp of deceased body, min 2x/hr
- Note position of body, covering, sunlight/shade
- Note rigor, affected areas; it can be broken with rough handling
- Temp of transport area, time; same w/cooler
Forensic Entomology

• The *most accurate* determination for TOD
• Can also be used to determine location of death, for DNA and toxicology testing
• Entomologists need daily weather reports of the prior 2-3 weeks from closest weather station (Hi/Lo, precip, +/- wind)
• Insect collection from the body: need time frame and temp of where has been stored
Basis for Forensic Entomology

- Flies lay eggs based on species of fly, temperature, rain, time of day, degree of decomp
- Location of eggs usually mouth and eyes, rear, wounds, usually not in areas of direct sunlight
- The length of the life cycle is affected by weather conditions
- Certain insects are attracted to body at different times
Entomology 101

- Eggs → 1\textsuperscript{st} instar (maggot) → 2\textsuperscript{nd} instar (larger) → 3\textsuperscript{rd} instar (largest) → puparium → newly emerged adult fly (+ empty pupa casing) → adult fly
- Can have several life cycle stages present
- Want to look for and sample oldest life cycle
- Want to get picture/sample of adult flies and any other insects present, including yellow jackets
Maggot eggs
Left: intact puparium (maggot in pupa stage inside)
Right: empty pupa casing – fly has hatched out
popping the end off
Special collection techniques
Maggots help identify sites of trauma

Gain entrance thru orifice or wound

Take and record core temperature of the mass of maggots
Entomology Collection

- Important for time of death
- Choose the largest instar maggots
- Get samples (10-30) of each type of maggot
- Maggot Motel: foil pouch w/beef liver in center; place live maggots on liver; fold foil and crimp edges securely
- Place in plastic container w/1” of dirt on bottom; punch tiny air-holes on lid
- Make Kill-Jar for live Adult Insects (nail polish remover)
Forensic Entomologists
Special Considerations with Animal as Evidence:

- Hoarding cases – large number of animals
- Transfer to foster – follow chain of custody
- Follow-up important
- Production of evidence later
- Defense has the right to examine evidence
- Knowledge of seizure laws – want forfeiture process asap
• Advantages of treating live animals
• Response to treatment, what was appropriate
• How fast gain weight
• How long to recover- how sick they were
• Emphasize what was preventable and how bad the owner let the animal get w/o medical care
Unique Findings and Forensic Testing in Animals

- Animals do not visibly bruise easily
- Need to reflect skin on deceased to determine full extent of injuries regardless of obvious injuries or cause of death
- Always look at eyes, ears, mouth, feet, tail and perineum
- Always take full body radiographs on all cases!
Neglect

• Neglect = Failure to act

• Need time estimate for condition to have been present which goes to the Degree of Suffering

• Core issue at neglect is Implied malice
Starvation

• Causes vital members of the body to cease to function

• Body is consuming itself

• Dehydration often present
Starvation

• Process of self-digestion, literally melting
  • Can die faster from dehydration
  • Presence of food does not R/O starvation
  • Can become too weak to eat
• **Collar-** loose, measure and compare to neck
• **Get the initial weight,** record subsequent weight gain and time frame
• **Important to have before and after photos**
• **How long for the weight loss?**
• Important to get Body Condition Score (BCS)
• Regular 1-5: 1=obese, 3=normal, 5=emaciated
• Or use Tuft’s Animal Care and Condition Scale
Testing:

- Changes in blood work supportive of starvation; not always have low glucose
- Collect blood samples, feces and hold
- Minimum database: Profile, CBC, UA, fecal, Felv/FIV, HWT
- Necropsy: changes found on gross exam and histopathology; helps find other concurrent diseases, contributing factors to death/disease
- Never assume a badly decomposed body cannot yield info
• The Process of Starvation: Loss of external then internal fat, the loss of deep organ fat

• Last place to lose fat is the Bone Marrow

• Can run Bone Marrow Fat test at Michigan State University (Diagnostic Center for Population and Animal Health) $8-15/test

• Great test even in decomposed bodies

• Death can occur prior to low Bone Marrow Fat
• Starvation causes immune suppression making the animal more susceptible to disease
• Need to look for signs of infectious disease, esp fatal diseases like parvo
• Cannibalism: collect bones found at the scene for examination of predation – photo, describe location, bag and tag
Hoardng Cases

- Identify each animal and where located
- Document conditions of home
- Full blood work, fecal, hwt, viral testing
- Necropsy deceased animals
- Timelines impt for conditions, acquisition of animals
- Use entomology testing
Hoardding: Scene Analysis
Address behavioral effects and consequences of the environment
Forced Mating
Lockwood Case: Hoarding

- 140+ dead cats in house
- Charged with 1 count of Aggravated Animal Cruelty (felony) and 144 counts of neglect (misdemeanor)
- How to prove felony neglect?
Outcome Goals for Hoarding Cases

- Long-term mandatory psychiatric counseling
- Long-term probation
- Probation to include no-contact of animals order
- Unannounced monitoring of home
- Jail time – as a deterrent
When Hoarders are not Hoarders

- Hoarding is neglect and considered passive act
- Hoarder usually reacts very emotionally about removing animals
- Deceased animals usually due to disease, starvation, cannibalism
Ohio Case

- Woman collecting puppies and kittens
- Hoarder?
Heat Stroke

- Need body temp asap – can extrapolate back to time of death for estimate
- Current body temp + (1.5 degrees/hr x hrs since death) = est of body temp at time of death
- Diagnosis may be based on circumstances surrounding death
- Congestion of viscera and +/- petechiae from DIC
- Necropsy asap - body is cooking destroying tissue
Can see characteristic posture of stiffened legs due to coagulation of muscle proteins
Embedded Collars

- Time for presence of injury - wks to mos!
- Granulation bed: 1 wk
- Gran tissue 1mm/d, 1cm/mo (slows as lesion ages)
• Can cause starvation

• Measure width and depth
Measure circumference of neck and compare to collar

Note foul odor

What was obvious to the owner

Save the collar
Gunshot Wounds

- Highly recommend Gunshot Wounds Textbook by DiMaio (CRC Press)
- Need to have familiarity w/guns and ammo
Gunshot Case

• Dog was escaped from yard directly into neighbor’s yard; owner ran to the fence and was calling dog when the dog was shot

• Issues: why was the dog shot? Was is self-defense? Who shot the dog?

• Suspect claimed that he did not shoot the dog
Trajectory Determination

TRAJECTORY: The path of the projectile was from left mid-lateral neck traversing the neck in a lateral, downward (ventral) direction towards the right side and ending dorsolateral shoulder area. The estimated position of the body, front legs, neck and head at the time the dog was shot is: the right front leg slight back, the left front leg straight underneath the chest or slight forward, the head horizontal and turned slightly to the left, approximately 30-45 degrees from center line of body.
Crime Scene Reconstruction

- Need to use trajectory to determine who could have shot dog
- Owner saw dog’s approximate location when the dog was shot
- Owner heard the shot – what is the significance?
- Determination of line-of-sight for other homes
- Process of elimination
Trial: State v. David Patterson

- All neighbors: no possession of air-type gun
- Owner-heard shot but no other neighbor
- Similar transactions – acquitted for previous dog shooting; S.W.A.T.
- Vet: trajectory, cause of death, dog behavior after she was shot
GUILTY!
Burn Wounds

- Always tell a story
- What is this pattern reveal?
- Smell, swab
Microwave Burns

• Damage depends on time and wattage
• Need microwave as evidence

• Peripheral tissue affected
• Deep organ damage
What Happened?

- Singed whiskers
- Circular burns on dorsal body
- Some coalescing burns
Strangulation
Tardieu Spots
Strangulation – Accidental?
Drowning

- Diagnosis of exclusion
- Water temp and bacteria affect rigor and decomposition
- Water or plant material in lungs or stomach – can enter passively; save samples
- Diatoms: diagnosis, site of drowning, season of death
- Strontium blood levels – sea water
- Water leaches out hemorrhage
Diatoms

- Found in all water, even puddles
- Unique to area of water, season
- Enter into lungs passively when body submerged
- Pumped by heart to rest of body
- If found in bone marrow - diagnostic
+/- Petechiae on the lungs – R/O Exposure

Most specific indicator: foam from nose, mouth or trachea – R/O Pulmonary edema
Blunt Force Trauma

- Head Trauma
- Fractures
- Skin Bruising
- Subcutaneous Bruising
- Muscle Injury
- Pain
- Increased CPK
- Nothing
Head Injuries

- Check for fractured teeth, lacerations, blood, torn palates and debris around the mouth
• Anterior uveitis, blood clots
• Luxated lens
• Fundic Exam
• Bruising of sclera, conjunctiva
Petechial hemorrhages within ear canal lining not seen in human head trauma
Suspected Blunt Force Trauma

- Witness: screaming, owner there, unable to walk on hind
Summary

- Fresh blunt force trauma all over the body
- Severe along the back
- Severe to lower spine/abdomen
- Older injury carpus
- Must reflect skin to determine all injuries
- Histopath – must r/o clotting disorders, tox
The Link to Violence
Stab Wounds

- Measure width and depth of wounds
- Look for evidence of full penetration
- Look for superficial marks indicating type of blade
- Determine if single or double-edged blade
- Provide educated guess on type of weapon used for all injuries
- Take samples of all blood-perpetrator can slip
Weapon Marks

- Take good quality photos with special photo scale
- Mikrosil rubber casting material
Weapon Determination
Cat Mutilations: Who is doing it?

- In Spokane, Washington, a neighborhood was finding \( \frac{1}{2} \) bodies of cats; sometimes the front \( \frac{1}{2} \) or the back \( \frac{1}{2} \)
- Community was in an uproar
- Next body found was shipped overnight for necropsy
• Mutilations where part of the body is missing is usually a predator attack
• Coyotes can bite down and severe the body of a small animal taking off with the portion in the mouth
• Foxes have been known to remove the head and bring it back for their children to play with!
• The margins of the cuts are what holds the clues as to the cause of the mutilation
Sexual Assault

- Inspect perineal area for trauma
- Inspect fur with UV light for fluids (semen, saliva)
- For dried fluid use wet-dry swab technique
- Swab teeth, gums, oral area
- Inspect feet
- Evaluate perineal bruising
- Vaginal exam for mucosa/cervical trauma
- Visual rectal exam/colonoscopy; poss tears/peritonitis
- Vaginal Swabs for semen, STD’s, DNA
- Rectal swabs (multiple) prior to taking temp
- Painful defecation
- Bloody stool, constipation
- Tail pain/injuries common
Fracture and large separation of vertebrae
SQ dissection of assoc hemorrhage
• External vulva abrasions, cervical bruising 1.25in from external folds
• Consider location of vulva
Establishing Sequence of Events

- State of Georgia v. Joshua (17) and Justin (19) Moulder – The Puppy Torture Case
- Broke into community center and caused extensive damage (Burglary, criminal damage to property)
- Deceased puppy found in oven (animal cruelty?)
- Had brought children in to see puppy in oven (child cruelty); threatened them if they snitched (terroristic threats)
Initial Crime Scene Findings

- Oven still warm but turned off
- One of oven racks had been removed prior to placing puppy in oven
- Residue from fire extinguishers on all surfaces
- Urine and paint on floors
- Paint in oven
Significance of Findings

- Duct tape applied first, paint afterwards, last was placed in oven
- Evidence puppy alive prior: urine DNA match, paint swipes inside oven, blood on oven door/bloody nails
- Duct tape compromised breathing
- Questions: would it take 1 or 2 to hog-tie, how long to die, cause of death, antemortem injury?
• Histopath: consistent with thermal injury – cannot determine if bruising with thermal damage
• COD: Multi-organ failure due to thermal injury
• Unknown what temp oven was set at, cannot determine how long it took for her to die; what is important is the evidence of struggle (paint, blood, nails)
• 2 people to hog-tie – why? Which taped first legs or muzzle? What would the puppy’s reaction have been? …. 
Puppy Demo as Evidence
Outcome:

- Hung Jury, 11-1
- Retrial set – 3 days before jury selection they pled guilty to all 9 counts
- Sentencing hearing: juvenile records revealed
- Judge issued sentence: Max on all charges to serve concurrent (burglary longest, 20 yrs) to serve 10 and 10 yrs of probation
Scar Charts: Distribution Pattern
Dog Fighting Pits: Blood Stain Analysis
Anticipating Defenses

- Blood spatter = dog fighting or 2 dogs fought during breeding
- Dog in heat = test for male DNA
- If get male DNA = will say from whelping
- How to prove puppy male vs adult male = Testosterone levels
SENTENCING
HOPE
Grave Detection and Excavation
Skeletal Remains
Case of the Missing Puppy
Take home lessons:

- NEVER freeze the body
- Maggots are our friends! They are the most important piece of evidence at any scene or on any body
- Always record environmental temperatures at the scene
- Always run bone marrow fat test in decomposed bodies and take x-rays
- Always take evidence and samples at the beginning – you never know what tests you may need to do later or what may become important when a suspect is located or arrested
Any questions?
“The day will come when men such as I will look upon the murder of animals the way we look upon the murder of man.”

Leonardo da Vinci