

**WRITING REPORTS, EXPERT
TESTIMONY AND ETHICS
FOR THE EXPERT WITNESS**

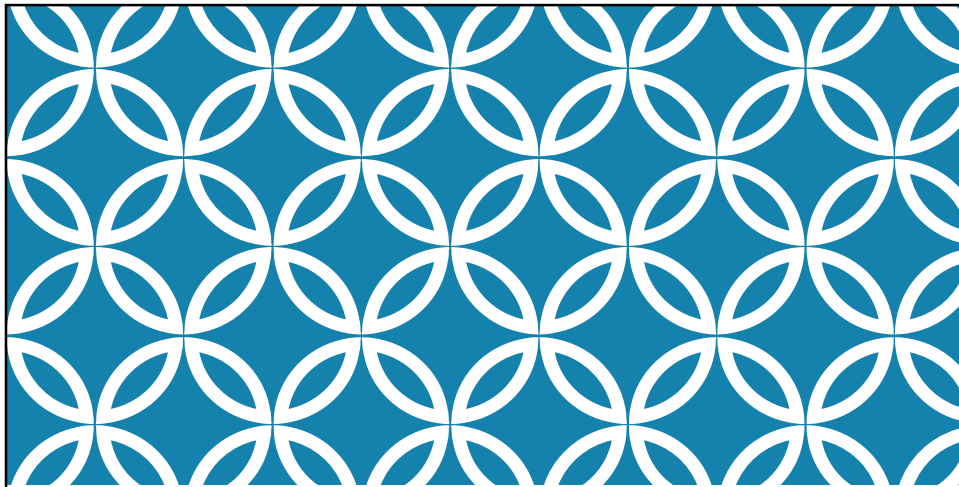
Chapter 13



**EXPERT TESTIMONY IN
HIGH-TECH
INVESTIGATIONS**

OBJECTIVES

- ❑ Explain guidelines for giving testimony as a technical/scientific or expert witness
- ❑ Describe guidelines for testifying in court
- ❑ Explain guidelines for testifying in depositions and hearings
- ❑ Describe procedures for preparing forensics evidence for testimony



PREPARING FOR TESTIMONY

PREPARING FOR TESTIMONY

- ☐ Technical or scientific witness
 - ☐ Provides facts found in investigation
 - ☐ Does not offer conclusions
 - ☐ Prepares testimony
- ☐ Expert witness
 - ☐ Has opinions based on observations
 - ☐ Opinions make the witness an expert
 - ☐ Works for the attorney

PREPARING FOR TESTIMONY (CONTINUED)

- ☐ Confirm your findings with documentation
 - ☐ Corroborate them with other peers
 - ☐ Social networking and professional organizations will help to locate peers
- ☐ Check opposing experts
 - ☐ Internet
 - ☐ Deposition banks
 - ☐ Curriculum vitae, strengths, and weaknesses

PREPARING FOR TESTIMONY (CONTINUED)

- ☐ When preparing your testimony consider the following questions:
 - ☐ What is my story of the case?
 - ☐ What can I say with confidence?
 - ☐ What is the client's overall theory of the case?
 - ☐ How does my opinion support the case?
 - ☐ What is the scope of the case? Have I gone too far?
 - ☐ Have I identified the client's needs for how my testimony fits into the overall theory of the case?

DOCUMENTING AND PREPARING EVIDENCE

- ☐ Document your steps
 - ☐ To prove them repeatable
- ☐ Preserve evidence and document it
- ☐ Do not use formal checklist
 - ☐ Do not include checklist in final report
 - ☐ Opposing attorneys can challenge them
- ☐ Collect evidence and document employed tools
- ☐ Maintain chain of custody

DOCUMENTING AND PREPARING EVIDENCE (CONTINUED)

- ☐ Collect the right amount of information
 - ☐ Collect only what was asked for
- ☐ Note the date and time of your forensic workstation when starting your analysis
 - ☐ Check your clock with time.gov
- ☐ Keep only successful output
 - ☐ Do not keep previous runs
- ☐ Search for keywords using well-defined parameters

DOCUMENTING AND PREPARING EVIDENCE (CONTINUED)

- ☐ Keep your notes simple
- ☐ List only relevant evidence on your report
- ☐ Define any procedures you use to conduct your analysis as scientific
 - ☐ And conforming to your profession's standards
- ☐ Monitor, preserve, and validate your work
- ☐ Validate your evidence using hash algorithms

REVIEWING YOUR ROLE AS A CONSULTING EXPERT OR AN EXPERT WITNESS

- ☐ Do not record conversations or telephone calls
- ☐ Federal information requirements
 - ☐ Four years of experience
 - ☐ Ten years of any published writings
 - ☐ Previous compensations
- ☐ Learn about all other people involved and basic points in dispute
- ☐ Brief your attorney on your findings and opinion of the court's expert
- ☐ Find out if you are the first expert asked

CREATING AND MAINTAINING YOUR CV

- ☐ **Curriculum vitae (CV)**
 - ☐ Lists your professional experience and education
 - ☐ Supports your role as an expert
- ☐ Show you continuously enhance your skills
- ☐ Detail specific accomplishments
- ☐ List basic and advanced skills
- ☐ Include a testimony log
 - ☐ Do not include books you have read, because you may not agree with everything in those books

PREPARING TECHNICAL DEFINITIONS

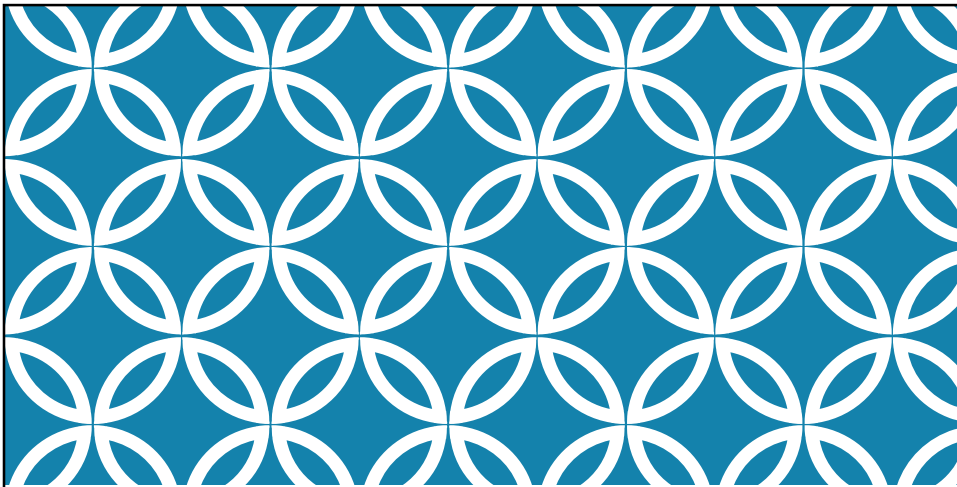
- ☐ Prepare definitions of technical concepts
- ☐ Use your own words and language
- ☐ Some terms
 - ☐ Computer forensics
 - ☐ Hash algorithms
 - ☐ Image and bit-stream backups
 - ☐ File slack and unallocated space
 - ☐ File timestamps
 - ☐ Computer log files

PREPARING TECHNICAL DEFINITIONS (CONTINUED)

- ☐ Some terms (continued)
 - ☐ Folder or directory
 - ☐ Hardware
 - ☐ Software
 - ☐ Operating system

PREPARING TO DEAL WITH THE NEWS MEDIA

- ❑ Some legal actions generate interest from the news media
- ❑ Reasons to avoid contact with news media
 - ❑ Your comments could harm the case and create a record that can be used against you
 - ❑ You have no control over the context of the information a journalist publishes
 - ❑ You can't rely on a journalist's promises of confidentiality



TESTIFYING IN COURT

TESTIFYING IN COURT

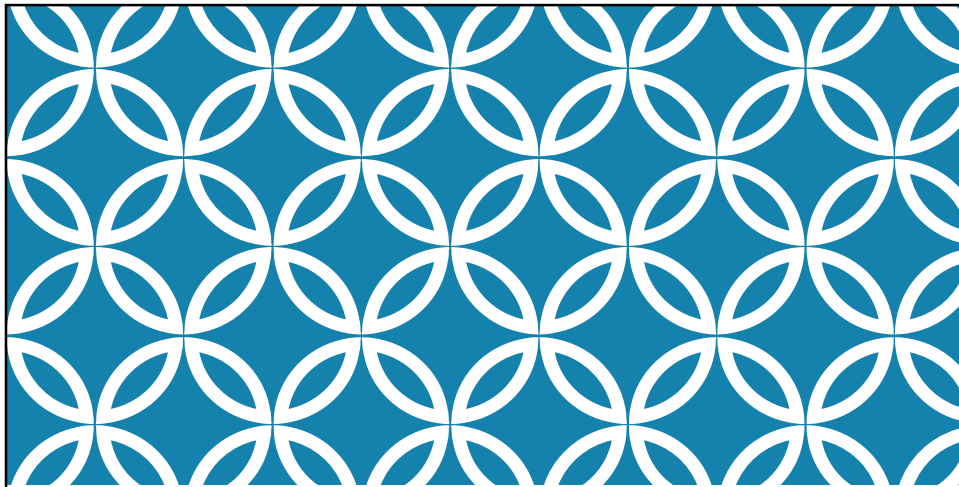
- ☐ Procedures during a trial
 - ☐ Your attorney presents you as a competent expert
 - ☐ Opposing attorney might attempt to discredit you
 - ☐ Your attorney leads you through the evidence
 - ☐ Opposing attorney cross-examines you

UNDERSTANDING THE TRIAL PROCESS

- ☐ Typical order of trial
 - ☐ Motion in limine (pretrial motion to exclude evidence)
 - ☐ Empaneling the jury
 - ☐ Opening statements
 - ☐ Plaintiff
 - ☐ Defendant
 - ☐ Rebuttal
 - ☐ Closing arguments
 - ☐ Jury instructions

PROVIDING QUALIFICATIONS FOR YOUR TESTIMONY

- ❑ Demonstrates you are an expert witness
 - ❑ This qualification is called **voir dire**
- ❑ Attorney asks the court to accept you as an expert on computer forensics
- ❑ Opposing attorney might try to disqualify you
 - ❑ Depends on your CV and experience



GENERAL GUIDELINES ON TESTIFYING

DELIVERY AND PRESENTATION

- ☐ Be conscious of the jury, judge, and attorneys
- ☐ If asked something you cannot answer, say:
 - ☐ That is beyond the scope of my expertise
 - ☐ I was not requested to investigate that
- ☐ Be professional and polite
- ☐ Avoid overstating opinions
- ☐ Guidelines on delivery and presentation:
 - ☐ Always acknowledge the jury and direct your testimony to them

DELIVERY AND PRESENTATION

- ☐ Movement
 - ☐ Turn towards the questioner when asked
 - ☐ Turn back to the jury when answering
- ☐ Place microphone six to eight inches from you
- ☐ Use simple, direct language to help the jury understand you
- ☐ Avoid humor
- ☐ Build repetition into your explanations

DELIVERY AND PRESENTATION

- ☐ Use chronological order to describe events
- ☐ If you're using technical terms, identify and define these terms for the jury
- ☐ Cite the source of the evidence the opinion is based on
- ☐ Make sure the chair's height is comfortable, and turn the chair so that it faces the jury

DELIVERY AND PRESENTATION

- ☐ Dress in a manner that conforms to the community's dress code
- ☐ Don't memorize your testimony
- ☐ For direct examination
 - ☐ State your opinions
 - ☐ Identify evidence to support your opinions
 - ☐ Relate the method used to arrive to that opinion
 - ☐ Restate your opinion

PREPARING TESTIMONY

- ☐ Prepare your testimony with the attorney who hired you
 - ☐ How is data (or evidence) stored on a hard drive?
 - ☐ What is an image or a bit-stream copy of a drive?
 - ☐ How is deleted data recovered from a drive?
 - ☐ What are Windows temporary files and how do they relate to data or evidence?
 - ☐ What are system or network log files?

USING GRAPHICS

- ☐ Graphical exhibits illustrate and clarify your findings
- ☐ Your exhibits must be clear and easy to understand
- ☐ Graphics should be big, bold, and simple
- ☐ The goal of using graphics is to provide information the jury needs to know
- ☐ Review all graphics with your attorney before trial
- ☐ Make sure the jury can see your graphics, and face the jury during your presentation

AVOIDING TESTIMONY PROBLEMS

- ☐ Recognize when conflict-of-interest issues apply to your case
- ☐ Avoid agreeing to review a case unless you're under contract with that person
- ☐ Avoid conversations with opposing attorneys
- ☐ You should receive payment before testifying
- ☐ Don't talk to anyone during court recess
- ☐ Make sure you conduct any conferences with your attorney in a private setting

UNDERSTANDING PROSECUTORIAL MISCONDUCT

- ☐ If you have found exculpatory evidence, you have an obligation to ensure that the evidence isn't concealed
- ☐ Initially, you should report the evidence to the prosecutor handling the case
 - ☐ Be sure you document the communication
- ☐ If this information isn't disclosed to the defense attorney in a reasonable time
 - ☐ You can report it to the prosecutor's supervisor or the judge

TESTIFYING DURING DIRECT EXAMINATION

☐ Techniques

- ☐ Work with your attorney to get the right language
- ☐ Be wary of your inclination to be helpful
- ☐ Review the examination plan your attorney has prepared
- ☐ Provide a clear overview of your findings
- ☐ Use a systematic easy-to-follow plan for describing your methods
- ☐ Practice testifying
- ☐ Use your own words when answering questions

TESTIFYING DURING DIRECT EXAMINATION (CONTINUED)

☐ Techniques (continued)

- ☐ Present your background and qualifications
- ☐ Avoid vagueness
- ☐ When you're using graphics in a presentation, keep in mind that you're instructing the jury in what you did to collect evidence

TESTIFYING DURING CROSS-EXAMINATION

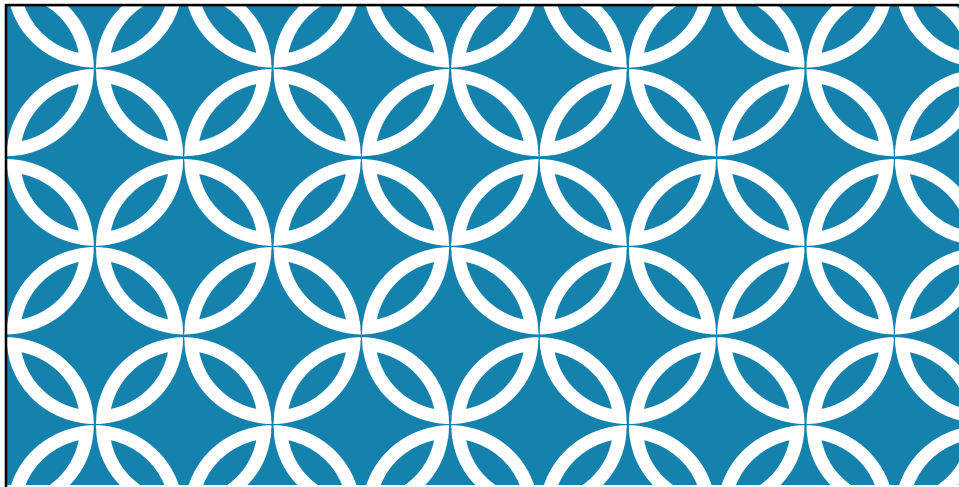
- ☐ Use your own words
- ☐ Keep in mind that certain words have additional meanings
- ☐ Opposing attorneys sometimes use the trick of interrupting you
- ☐ Be aware of leading questions
- ☐ Never guess when you do not have an answer

TESTIFYING DURING CROSS-EXAMINATION (CONTINUED)

- ☐ Be prepared for challenging, pre-constructed questions
 - ☐ Did you use more than one tool?
- ☐ Rapid-fire questions
- ☐ Sometimes opposing attorneys declare that you aren't answering the questions
- ☐ Keep eye contact with the jury
- ☐ Sometimes opposing attorneys ask several questions inside one question

TESTIFYING DURING CROSS-EXAMINATION (CONTINUED)

- ☐ Attorneys make speeches and phrase them as questions
- ☐ Attorneys might put words in your mouth
- ☐ Be patient
- ☐ Most jurisdictions now allow the judge and jurors to ask questions
- ☐ Avoid feeling stressed and losing control
- ☐ Never have unrealistically high self-expectations when testifying; everyone makes mistakes



PREPARING FOR A DEPOSITION

PREPARING FOR A DEPOSITION

- ☐ **Deposition** differs from trial testimony
 - ☐ There is no jury or judge
- ☐ Opposing attorney previews your testimony at trial
- ☐ **Discovery deposition**
 - ☐ Part of the discovery process for a trial
- ☐ **Testimony preservation deposition**
 - ☐ Requested by your client
 - ☐ Preserve your testimony in case of schedule conflicts or health problems

GUIDELINES FOR TESTIFYING AT DEPOSITIONS

- ☐ **Some recommendations**
 - ☐ Stay calm, relaxed, and confident
 - ☐ Maintain a professional demeanor
 - ☐ Use name of attorneys when answering
 - ☐ Keep eye contact with attorneys
 - ☐ Try to keep your hands on top of the table
 - ☐ Be professional and polite
 - ☐ Use facts when describing your opinion
 - ☐ Being deposed in a discovery deposition is an unnatural process

GUIDELINES FOR TESTIFYING AT DEPOSITIONS (CONTINUED)

- ☐ If you prepared a written report, the opposing attorney might attempt to use it against you
- ☐ If your attorney objects to a question from the opposing attorney
 - ☐ Pause and think of what direction your attorney might want you to go in your answer
- ☐ Be prepared at the end of a deposition to spell any specialized or technical words you used

RECOGNIZING DEPOSITION PROBLEMS

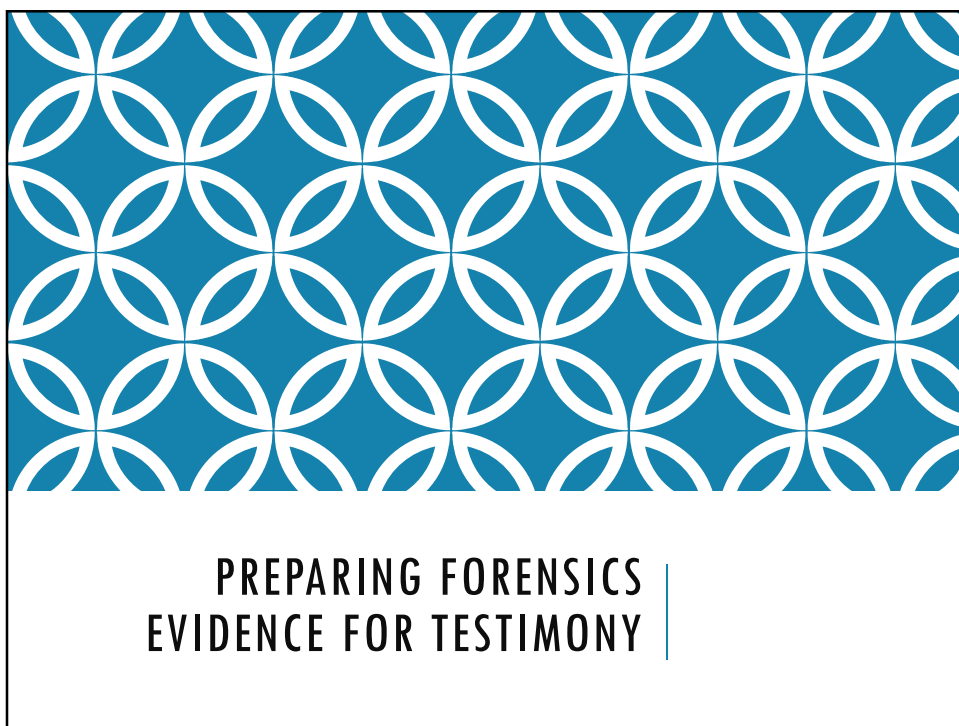
- ☐ Discuss any problem before the deposition
 - ☐ Identify any negative aspect
- ☐ Be prepared to defend yourself
- ☐ Avoid
 - ☐ Omitting information
 - ☐ Having the attorney box you into a corner
 - ☐ Contradictions
- ☐ Be professional and polite when giving opinions about opposite experts

RECOGNIZING DEPOSITION PROBLEMS

- ❑ To respond to difficult questions that could jeopardize your client's case
 - ❑ Pause before answering
- ❑ Keep in mind that you can correct any minor errors you make during your examination
- ❑ Discovery deposition testimony often doesn't make it to the jury
 - ❑ It might be presented to the jury, usually as part of an attempt to discredit the witness

GUIDELINES FOR TESTIFYING AT HEARINGS

- ❑ Testifying at a hearing is generally comparable to testifying at a trial
- ❑ A hearing can be before an administrative agency or a legislative body or in a court
- ❑ Often administrative or legislative hearings are related to events that resulted in litigation
- ❑ A judicial hearing is held in court to determine the admissibility of certain evidence before trial
 - ❑ No jury is present



PREPARING FORENSICS EVIDENCE FOR TESTIMONY

- ❑ Use ProDiscover Basic to extract e-mail folders
 - ❑ And FTK Demo to extract and analyze e-mail metadata and messages
 - ❑ See Figures 15-1 and 15-2

PREPARING FORENSICS EVIDENCE FOR TESTIMONY (CONTINUED)

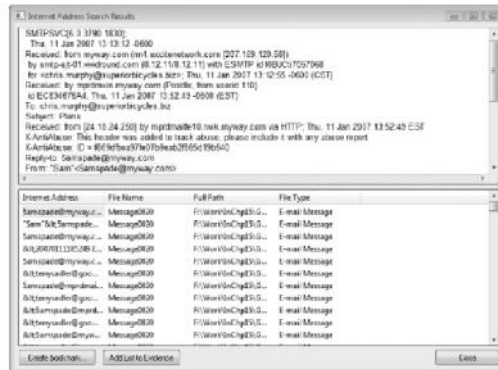


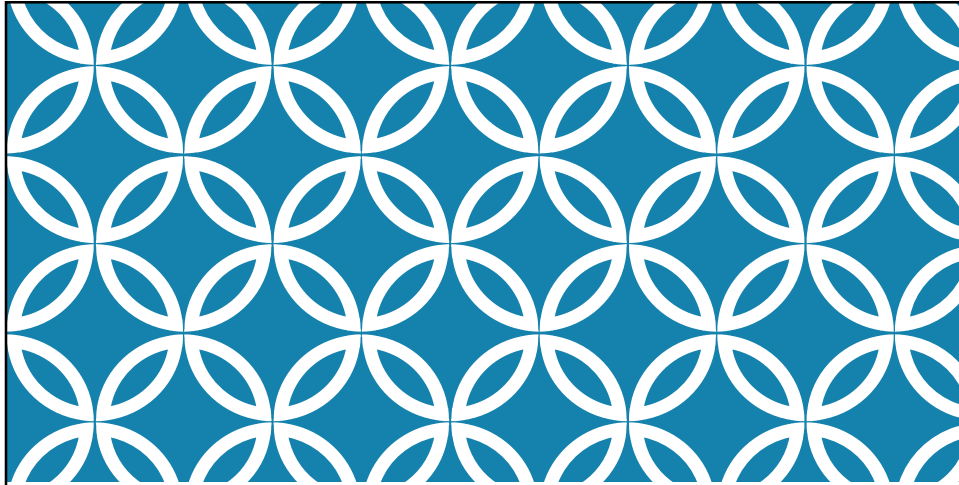
Figure 15-1 The Internet Address Search Results dialog box



Figure 15-2 The FTK File List toolbar

PREPARING EXPLANATIONS OF YOUR EVIDENCE-COLLECTION METHODS

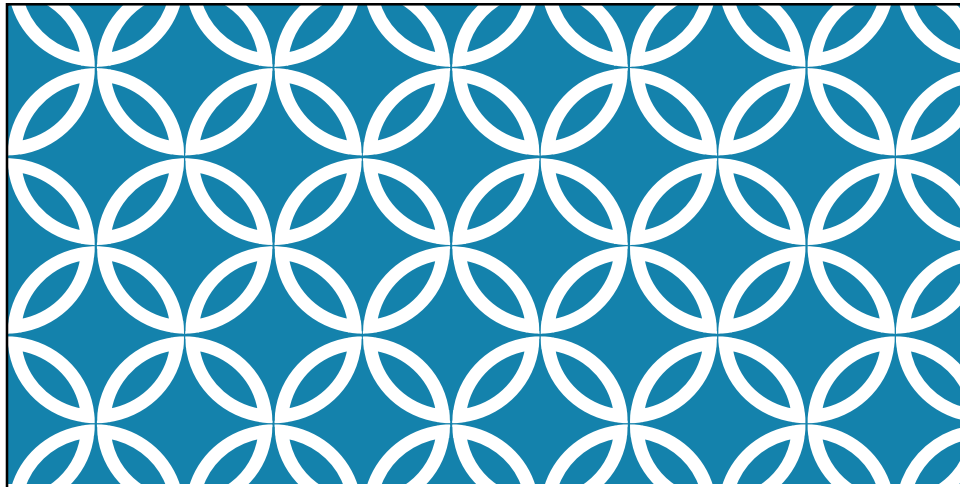
- ❑ To prepare for court testimony
 - ❑ You should prepare answers for questions on what steps you took to extract e-mail metadata and messages
- ❑ You might also be asked to explain specific features of the computer, OS, and applications (such as Outlook)
 - ❑ And explain how these applications and computer forensics tools work



ETHICS FOR THE EXPERT WITNESS

OBJECTIVES

- ☐ Explain how ethics and codes apply to expert witnesses
- ☐ Explain how other organizations' codes of ethics apply to expert testimony
- ☐ Describe ethical difficulties in expert testimony
- ☐ Explain the process of carving data manually



APPLYING ETHICS AND CODES TO EXPERT WITNESSES

APPLYING ETHICS AND CODES TO EXPERT WITNESSES

- ❑ **Ethics**

- ❑ Rules you internalize and use to measure your performance

- ❑ **Codes of professional conduct** or responsibility

- ❑ Standards that others apply to you or that you are compelled to adhere to by external forces
 - ❑ Such as licensing bodies

- ❑ **People need ethics to help maintain their balance**

- ❑ And self-respect and the respect of their profession

APPLYING ETHICS AND CODES TO EXPERT WITNESSES (CONTINUED)

- ❑ Laws governing codes of professional conduct or responsibility
 - ❑ Define the lowest level of action or performance required to avoid liability
- ❑ Expert witnesses should present unbiased, specialized, and technical evidence to a jury
- ❑ Expert witnesses testify in more than 80% of trials
 - ❑ And in many trials, multiple expert witnesses testify

APPLYING ETHICS AND CODES TO EXPERT WITNESSES (CONTINUED)

- ❑ The most important laws applying to attorneys and witnesses are the rules of evidence
- ❑ Experts are bound by their own personal ethics and the ethics of their professional organizations
- ❑ In the United States, there's no state or national licensing body for computer forensics examiners

COMPUTER FORENSICS EXAMINERS' ROLES IN TESTIFYING

- ❑ Computer forensics examiners have two roles:
 - ❑ Scientific/technical witness and expert witness
- ❑ As expert witness
 - ❑ You can testify even if you weren't present when the event occurred
 - ❑ Or didn't handle the data storage device personally
- ❑ Criticism: it's possible to find and hire an expert to testify to almost any opinion on any topic
 - ❑ Beware of attorneys' opinion shopping

CONSIDERATIONS IN DISQUALIFICATION

- ❑ One of the effects of violating court rules or laws is disqualification
- ❑ Opposing counsel might attempt to disqualify you
 - ❑ Based on any deviations from opinions you've given in previous cases
- ❑ Some attorneys contact many experts as a ploy to disqualify them
 - ❑ Or prevent opposing counsel from hiring them
- ❑ Determine who the parties are to reduce the possibility of a conflict

CONSIDERATIONS IN DISQUALIFICATION (CONTINUED)

- ☐ Whenever you are aware of a possible disqualification issue
 - ☐ Bring it to the attention of the attorney who has retained you
- ☐ Factors to disqualify an expert include:
 - ☐ Whether the attorney informed the expert that their discussions were confidential
 - ☐ Whether the expert reviewed materials marked as confidential or attorney work product
 - ☐ Whether the expert was asked to sign a confidentiality agreement

CONSIDERATIONS IN DISQUALIFICATION (CONTINUED)

- ☐ Factors to disqualify an expert include: (continued)
 - ☐ Number of discussions held over a period of time
 - ☐ The type of documents that were reviewed
 - ☐ The type of information conveyed to the expert
 - ☐ The amount of time involved in discussions or meetings between the expert and attorney
 - ☐ Whether the expert provided the attorney with confidential information
 - ☐ Whether the attorney formally retained the expert

CONSIDERATIONS IN DISQUALIFICATION (CONTINUED)

- ❑ Factors to disqualify an expert include:
(continued)
 - ❑ Whether the expert voiced concerns about being retained
 - ❑ Whether the expert was requested to perform services for the attorney
 - ❑ Whether the attorney compensated the expert

TRAPS FOR UNWARY EXPERTS

- ❑ Be cautious about the following potential traps
 - ❑ What are some differences between the attorney's motives and the investigator's duty?
 - ❑ Is the function of the expert witness in conflict with the investigator's code of professional responsibility?
 - ❑ You should anticipate that the opposing counsel will look at your organization memberships and those organizations' codes of professional responsibility
- ❑ Contingency fees aren't allowed except in certain limited circumstances

TRAPS FOR UNWARY EXPERTS (CONTINUED)

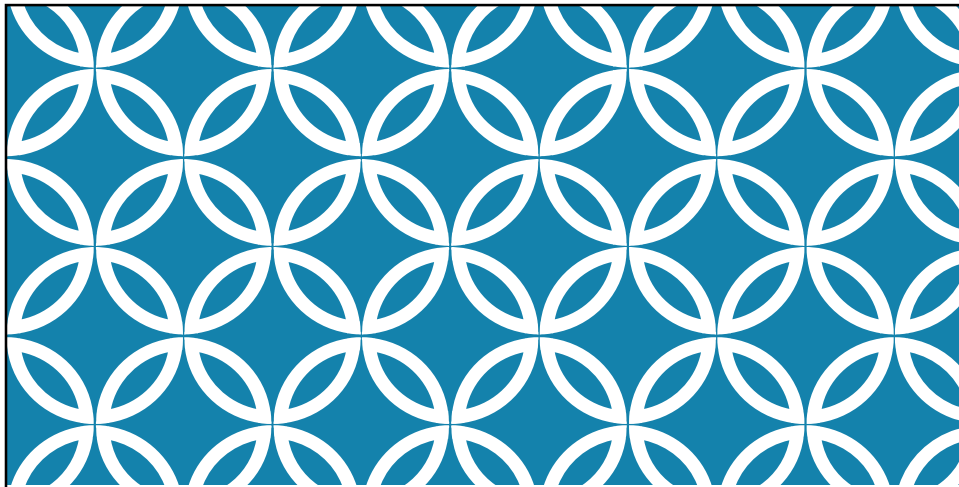
- ☐ Avoid obvious ethical errors
 - ☐ Don't present false data or alter data
 - ☐ Don't report work that was not done
 - ☐ Don't ignore available contradictory data
 - ☐ Don't do work beyond your expertise or competence
 - ☐ Don't allow the attorney who retained you to influence your opinion in an unauthorized way

TRAPS FOR UNWARY EXPERTS (CONTINUED)

- ☐ Avoid obvious ethical errors (continued)
 - ☐ Don't accept an assignment if it cannot reasonably be done in the allowed time
 - ☐ Don't reach a conclusion before you have done complete research
 - ☐ Don't fail to report possible conflicts of interest

DETERMINING ADMISSIBILITY OF EVIDENCE

- ❑ Hypothetical questions can give you the factual structure to support and defend your opinion
- ❑ Although expert opinions can be presented without stating the underlying factual basis
 - ❑ The testimony isn't admissible if the facts on which the opinion is based are inadequate
 - ❑ Or there's insufficient evidence to allow stating a legitimate opinion



ORGANIZATIONS WITH CODES
OF ETHICS

ORGANIZATIONS WITH CODES OF ETHICS

- ☐ No single source offers a definitive code of ethics for expert witnesses
- ☐ You must draw on standards from other organizations to form your own ethical standards

INTERNATIONAL SOCIETY OF FORENSIC COMPUTER EXAMINERS

- ☐ Includes guidelines such as the following:
 - ☐ Maintain the utmost objectivity in all forensic examinations and present findings accurately
 - ☐ Conduct examinations based on established, validated principles
 - ☐ Testify truthfully in all matters before any board, court, or proceeding
 - ☐ Avoid any action that would appear to be a conflict of interest

INTERNATIONAL SOCIETY OF FORENSIC COMPUTER EXAMINERS (CONTINUED)

- ❑ Includes guidelines such as the following: (continued)
 - ❑ Never misrepresent training, credentials, or association membership
 - ❑ Never reveal any confidential matters or knowledge learned in an examination without an order from a court of competent jurisdiction or the client's express permission

INTERNATIONAL HIGH TECHNOLOGY CRIME INVESTIGATION ASSOCIATION

- ❑ HTCIA core values include the following requirements related to testifying:
 - ❑ The HTCIA values the Truth uncovered within digital information and the effective techniques used to uncover that Truth, so that no one is wrongfully convicted
 - ❑ The HTCIA values the Integrity of its members and the evidence they expose through common investigative and computer forensic best practices, including specialized techniques used to gather digital evidence

INTERNATIONAL ASSOCIATION OF COMPUTER INVESTIGATIVE SPECIALISTS

- ❑ Standards for IACIS members include:
 - ❑ Maintain the highest level of objectivity in all forensic examinations and accurately present the facts involved
 - ❑ Thoroughly examine and analyze the evidence
 - ❑ Conduct examinations based upon established, validated principles
 - ❑ Render opinions having a basis that is demonstratively reasonable
 - ❑ Not withhold any findings that would cause the facts of a case to be misrepresented or distorted

AMERICAN BAR ASSOCIATION

- ❑ Be aware of the basic rules of professional conduct attorneys must follow
- ❑ ABA's Model Code of Professional Responsibility (Model Code) and its successor, the Model Rules of Professional Conduct (Model Rules)
 - ❑ Are the basis of state licensing bodies' codes
- ❑ Codes contain provisions limiting the fees experts can receive for their services
- ❑ The ABA has stated that expert witnesses do not owe a duty of loyalty to their clients

AMERICAN MEDICAL ASSOCIATION

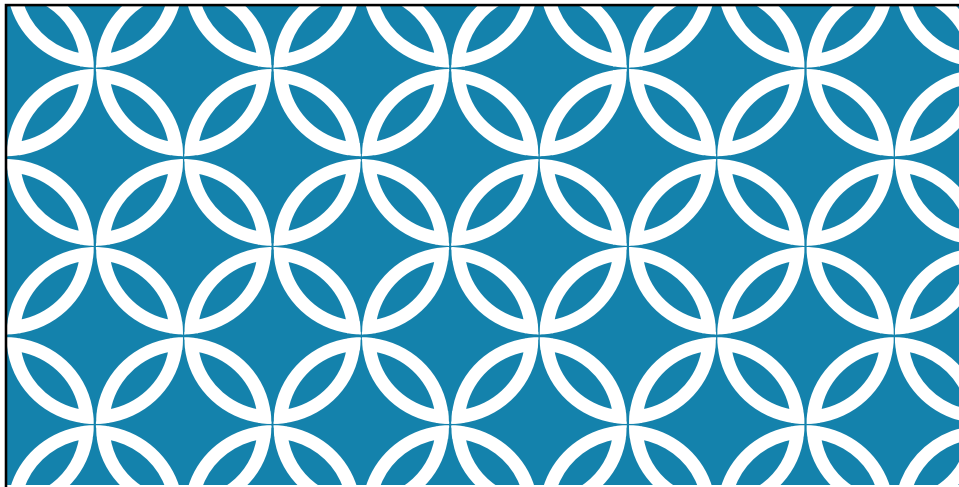
- ❑ Sets out five recommendations:
 - ❑ The physician is a professional with special training and experience and has an ethical obligation to assist the administration of justice
 - ❑ The physician may not become a partisan during the legal proceeding
 - ❑ The medical witness should testify truthfully and be adequately prepared

AMERICAN MEDICAL ASSOCIATION (CONTINUED)

- ❑ Sets out five recommendations: (continued)
 - ❑ The physician must make the attorney calling him or her aware of favorable and unfavorable information uncovered in the physician's assessment
 - ❑ The physician may not accept a contingency fee
- ❑ Several other provisions address the ethical constraints of testifying physicians
- ❑ The AMA also sets goals in dealing with its members

AMERICAN PSYCHOLOGICAL ASSOCIATION

- ❑ APA's Ethical Principles of Psychologists and Code of Conduct
 - ❑ The most broadly accepted set of guidelines governing psychologists' conduct as experts
- ❑ Several standards in the APA's Ethics Code apply to psychologists' expert testimony
- ❑ The Ethics Code also cautions psychologists about the limitations of assessment tools
- ❑ Other Ethics Code standards are related to expert testimony, too



ETHICAL DIFFICULTIES IN EXPERT TESTIMONY

ETHICAL DIFFICULTIES IN EXPERT TESTIMONY

- ❑ There are inherent conflicts between the goals of attorneys
 - ❑ And the goals of scientists or technicians (experts)
- ❑ Attorneys work in an adversarial system and look to sway the judge or jury
- ❑ Science requires experts to focus on the evidence without the influence of others' objectives
- ❑ Daubert and the APA's forensics guidelines
 - ❑ Can challenge experts to choose between complete impartiality and responsible advocacy

ETHICAL DIFFICULTIES IN EXPERT TESTIMONY (CONTINUED)

- ❑ Enforcing any professional organization's ethical guidelines is difficult
 - ❑ Principles can be enforced only against members of the organization
- ❑ All guidelines rely primarily on internalization of the codes and witnesses' analysis of when and how they will participate in a case

ETHICAL RESPONSIBILITIES OWED TO YOU

- ☐ Your attorney owes you
 - ☐ A fair statement of the case or situation
 - ☐ Adequate time to review evidence and prepare your report
 - ☐ A reasonable opportunity to examine data, conduct testing, and investigate the matter before rendering an opinion
- ☐ Most attorneys, including opposing counsel, are competent, courteous professionals

ETHICAL RESPONSIBILITIES OWED TO YOU (CONTINUED)

- ☐ Some opposing counsel attempt to make discovery depositions physically uncomfortable
- ☐ As a measure of protection, you might want to have your personal attorney attend the deposition
 - ☐ This attorney can't object to questions but is available to advise the attorney who retained you or to advise you during breaks

STANDARD AND PERSONALLY CREATED FORENSICS TOOLS

- ❑ The tools you use to recover, control, and track evidence are subject to review by opposing parties
 - ❑ If the court deems them unreliable, the evidence you recovered with those tools might not be admitted
 - ❑ Or might be admitted with a limiting instruction
- ❑ If you use standard tools, you simplify the process of validating them
- ❑ Personally created tools might have advantages that you can demonstrate to a judge
 - ❑ Who determines whether evidence is admissible