Ethical Issues

- People expect professional behavior from you

- Professional ethics questions arise in daily work
  - Responsibilities as humans and engineers
  - Professional rights

- Guidelines
  - Common sense
  - Code of ethics of professional engineering societies
  - Law

- Challenges
  - Knowing what to do
  - Identifying when issues arise

- We will look at several examples*

*Professional driver on closed course.
Professional Responsibilities

- Confidentiality and proprietary information
  - Keep certain client information secret or confidential
    » Explicit policy (e.g., defense industry) or implied
  - Examples:
    » Designs, test results, data
    » Upcoming products
    » Supplier information
    » Production costs and yield
    » Business information (e.g., number of employees)
    » Marketing strategies
  - Examples from other fields:
    » Patient information in health care
    » Attorney-client privilege in legal field
  - Confidentiality extends beyond duration of employment

- What if engineer takes job with competitor?
Professional Responsibilities

- **Conflict of interest**
  - Your impartial opinion and actions are expected
  - Interest may interfere with professional obligation
    - Financial interest
    - Personal interest
  - Guidelines
    - Company guidelines
    - Ask your coworker or manager for second opinion
    - Code of ethics may have explicit statements
  - Appearance of conflict of interest is already a problem
    - Undermines mutual trust
- **What gifts are acceptable or may appear as a bribe?**
  - Sigmund Freund: “Sometimes a cigar is just a cigar”
Professional Responsibilities

- Environmental ethics
  - Humans are part of the environment
    - Safety of people
  - Moral standing of environment has increased
    - Nature considered important beyond usefulness to humans
  - Animals, plants, ecosphere need to be considered
  - Often conflicting goals
    - Focus on humans benefit?
    - Focus on environment impact?
  - Guidelines
    - Personal beliefs
    - Expert opinions
    - Laws and regulations
  - Potentially big differences in ethical views

What is the worst case impact of your SPD project?
Professional Rights

- Rights
  - Right to privacy
  - Right to participate in activities of your own choosing outside of work
  - Right to reasonably object to company policies without fear of retribution
  - Right to due process
  - Right of professional conscience
    - Right to exercise professional judgment in discharging your duties
    - Right to exercise this judgment in an ethical manner
    - Example: right to refuse to engage in unethical behavior
  - Exercising of rights may be viewed as insubordination
- What if engineer refuses work on defense project?
Whistleblowing discloses wrongdoing in organization
- Internal whistleblowing
- External whistleblowing

Considered bad for organization and act of disloyalty
- Some legal protection

Right conditions need to be met
- Need, proximity, capability, last resort

Generally very difficult decision
Computer Ethics

- Computers as instrument of unethical behavior
  - Cybercrime: theft, gambling, spamming, extortion
  - Violation of privacy
- Computer as object of unethical acts
  - Hacking into computer systems
    » Access to information
    » Modification of information
    » Destruction of information
- Autonomous computers
  - Computers control may not be predictable
  - Example: stock market crash in 1987
- Guidelines
  - Moral judgment still applies
  - Some codes of ethics have computer use section
IEEE Code of Ethics

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

1. to accept responsibility in making decisions consistent with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding of technology, its appropriate application, and potential consequences;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.