

CS 3001 Computers, Society, and Professionalism
Spring 2023
Section Discussion Guide
Week 1

I. Introductions

- Introduce yourself including:
 - Major
 - Threads, if relevant
 - Year

II. Section discussion expectations

- Come to each section with a question about the lecture or readings that you find interesting, or a news item that is relevant to the class
 - We will discuss each person's article/question at the start of each section
- Read the section guide before section
 - Note that some sections require you to do something **before** section. Like post a quote on Canvas from the reading or ask a question of a relative or friend.
 - After each section, read the section guide for the following week so you'll be prepared.
- Tone of discussion
 - Remember that we represent many views
 - Everyone should feel welcome and respected
 - It's OK to ask, "Why do you believe that?"
 - It's OK to answer, "I don't know--I need to think about it."
 - Try not to dominate the discussion
 - It's OK to occasionally have a two-person back and forth focused discussion
 - But most of the time try to *let at least two other people speak before you speak again*
 - Sections are small--you are expected to speak multiple times every meeting
- Expect section to last the full two hours most weeks

III. Issues about technology and society

- Talk to the person next to you
 - Share an issue about technology and society that interests you
- Go around the class, and each person will introduce their partner and explain their partner's issue of interest

IV. Mindfulness and Technology

- Review the policy on mindful use of laptops in class
- Does laptop use in class help you learn?
 - Do you remember more when you take notes by hand or by laptop?

- In what ways can laptop use in class distract you?
- Has anyone around you in class ever distracted you with laptop or phone activity?
- How does cell phone use impact conversations and meals with family and friends?
 - Does cell phone use ever detract from being “fully present”?
 - Does cell phone use ever enhance the conversation with useful information?
- What are your personal rules for yourself about when to use and not use mobile computing?

V. The stop sign

- Would you stop?
 - Why or why not

VI. People in the Therac controversy

- Each person should present a person in the Therac controversy for discussion, focusing on:
 - What that person did
 - What that person failed to do
 - What they could have done differently
 - How that affected what happened
- Discuss key remaining people who were not picked. You don't have to discuss all of these, but continue the discussion until you feel like you have discussed key elements of the different kinds of people and all the major issues.
 - Programmer of Therac-25
 - Radiation physicists
 - Tim Still (physicist at Kennestone)
 - After first accident, contacted AECL to ask if Therac-25 could operate in electron mode without scanning to spread the beam
 - Hamilton staff who decide to add their own hardware interlocks
 - Fritz Hager (physicist in Tyler, TX)
 - worked to understand what happened
 - Frank Borger (physicist at u of chicago)
 - realizes that students entering data funny lead to hardware error on Therac 20 (but hardware interlocks prevent damage). reports to FDA
 - Operators
 - Operator in Tyler, TX remembers what she did, was able to recreate it
 - Patients
 - Kennestone patient files lawsuit against the hospital
 - Hospital management
 - Ontario Cancer Foundation is not satisfied with official response
 - Hires independent consultant
 - Consultant correctly says need hardware interlock to check turntable position

- Forwards recommendation to AECL, who don't comply
 - Installs the interlock on their own machine
- AECL employees
 - quality assurance manager
 - service engineer sent to investigate Ontario problem
 - people involved with first redesign after Ontario accident
 - adding fault tolerance for one microswitch failure
 - claim '5 orders magnitude' improvement in safety
 - "hazards committee"
 - engineer who comes to Tyler, TX
 - tells them no overdoses have been reported elsewhere
 - engineers who studied 'cursor up' problem, but found no cause
 - person who wrote notice to users not to use the 'up' key, with no explanation why
 - person at FDA who rejects this as unsatisfactory
- Lawyers in lawsuits
- Judges in lawsuits
- Canadian administrators at Radiation Protection Bureau (RPB)
- Members of Therac-25 users group
- Independent engineering consultants
 - Independent consultant hired by Ontario Cancer Foundation
 - Independent firm hired by Tyler, TX
- FDA official
 - required only 'pre-notification' for approval of Therac, because a 'substantially similar' product was already on the market

VII. Causal factors

- For each of Leveson's causal factors
 - Quick review: what did this mean in the Therac tragedies?
 - Can you think of other situations where this factor applies?

VIII. First homework assignment

- <https://faculty.cc.gatech.edu/~asb/teaching/3001/spring23/hw-737.html>
- Discuss the assignment
- Assignment due date

IX. Call an older family member or friend

- For section next week, call an older family member or friend and ask them:
 - What is the most significant change in technology in your lifetime?
 - For better?
 - For worse?
 - What surprised you the most?
- Come to section week 2 prepared to discuss their answers.

X. Questions

- Any further questions about the class?

XI. Introduce the readings for next week