

## COMAP 2016 Advice for Future Participants

### Suggestions for MATH 303 Topics

- Dimensional analysis and sensitivity analysis were quite useful
- Reading through other papers was useful (Paper 3 as a bad example helped)
- Early problem/variables/assumptions exercises were helpful
- Used Mathematica rather than Netlogo
- Can download Netlogo on your Z drive (to get around administrator rights, etc.)
- Crash course on ordinary differential equations (both teams used these)
- Possibly include data analysis unit to prepare for new Problem C

### Teamwork/Assigning Tasks

- Sharelatex only allows two people to simultaneously edit (but can make it public to allow everyone to edit?)
- Make a to-do list, everyone picks something and does it
- Whoever is strongest at a particular area claims that one (chemistry background was relevant on one of the problems)
- If you did it, you wrote it up – read each other's sections and edit
- Make sure to use spellcheck at the end, one team found a lot of typos at the last minute
- **Have every person write individual abstract, then share/compile/edit**

### Time Management

- Set cutoff times for various tasks, including end of day (stop at 2:00am no matter what, go to bed)
- Did writing and math at the same time
- Other team did lots of math on Friday, Saturday, wrote all day on Sunday, felt a bit of time crunch on Monday doing summary
- One team spent approximately 80-85 hours working, other team used about 48 (got plenty of sleep)
- One student took an hour running break every day
- One team staggered breaks so that two people were always working, other team took a break all together
- Literature review, background research completed by midnight Thursday, some extra on Friday
- Hard to get started in the mornings, but usually came in later than originally planned
- Make chart of when people will be absent, helps planning tasks

### Food

- One person bought a ton of snacks and kept it in the lab
- One team usually ate meals in the lab, other team's individuals made own decisions about when to take meal breaks
- Stromboli and pasta were big hits

### TeX Issues

- **Mathematica froze on a teammate in the middle of just regular typing, so save often!**
- Dropbox was really helpful to share files

### Other Classwork

- One person got a lot of work done ahead of time
- Some did nothing during the whole competition
- Most went to classes on Monday

### Miscellaneous

- In Bancroft computer lab, seat at front of lab is most comfortable for back issues
- On Saturday, SIMS trash door was unlocked already
- Sunday, tons of boys running around in SIMS (Greek rushing thing?)
- Sunday, Bancroft was locked, students had to go in through Owens
- Disney music is nice while you're working!
- You definitely CAN sleep, it's ok!
- Little bonding experiences helped team work together better
- **Really cold in SIMS over the weekend! (turn off heat over weekend?)**
- Tried using personal laptop to avoid network computers automatically shutting off, etc, but wireless internet connection was really bad

## **COMAP 2015 Advice for Future Participants**

### Suggestions for MATH 303 Topics

- Move NetLogo/LaTeX earlier in the course to allow more time to get used to syntax (possibly introduce as out-of-class assignment)
- A day to focus on writing the abstract
- Keep comparison of differently ranked papers, possibly keep dimensional analysis (incorporate statistical components)
- Dropbox folder with quick review materials for calculus, statistics, linear algebra, differential equations, optimization, numerical analysis, physics
- More training with background research, brainstorming initial model
- Go through a paper and pick out the important parts

### Teamwork/Assigning Tasks

- Have a team that's here! One member traveling was difficult.

- Two partners were at work half of the day for three days -> clear your schedule!
- One person as a LaTeX/NetLogo/coding guru, one math guru, one writing/editing guru (everybody worked on everything, but if something got stuck, guru's responsibility)
- Another team's approach was more fluid, everybody worked on what needed to be done

## Time Management

- Set deadlines!
- Absolutely stopped math at 2:00pm Sunday, focused on writing.
- One team worked on model until Monday morning (teammate traveling)
- Plan on 70-80 hours of work out of the 96 hours available
- Schedule time to sleep (one person overslept a lot on Sunday from sleep deprivation)
- Computers shut down at either midnight or 4:00am every night, warns you only 1 minute beforehand (Word documents gone!) -> Save often!
- In SIMS, open Notepad and put something on spacebar to prevent computer from auto-logging off
- One team took substantial 2-3 hour breaks throughout to stay fresh when working
- Do thorough background research to avoid building a partial model that needs to be scrapped on Saturday
- Take walks! Run back and forth to bathrooms to get blood pumping

## Food

- Keep the Abernathy Stromboli
- Mom brought a whole dinner that was very good
- Many teams sustained themselves with lots of candy, doughnuts, etc. and regretted it!
- One team had a coffee machine that was helpful
- Bring change for the drink machine!
- Pack a big bag of snacks to bring with you everyday

## TeX Issues

- Sharelatex.com is nice! You have to make the project public so that all three can work on it at the same time (one person sign up, and then share with other teammates)
- Easy to Google syntax issues

## Other Classwork

- If teammates in same classes, send one person to class and have them catch up the others
- Talk to professors about making up tests, as well as being understanding with assignments due right after the contest ends (brain-dead!)
- Try to get upcoming work done before the contest starts!

#### Miscellaneous

- Don't discount Successful Participant paper – Google Maps image was very effective
- Don't reinvent the wheel
- Maybe let cleaning staff in Bancroft know about competition (called Campus Police)
- Campus Police needs to know if you'll be staying overnight, ask them to come knock on the door and ask if they'll be staying overnight
- Make sure Owens building director reserves room for whole day, not just evenings
- Make sure reserved labs don't have other classes (within limits), check out library rooms with computer/smartboard
- Make Bancroft sign bigger, more blatant!
- When you go to print, there is a page limit (25 at a time), but it still uses your quota even though it doesn't print!

#### **COMAP 2014 Advice for Future Participants**

1. Do NOT miss the NetLogo day! Program was very useful for one of the problems (traffic rule).
2. Keeping to a daily schedule was very helpful (stuck to timeline outlined in class). Math done by Sunday was a good idea.
3. Getting a plan of attack done on Thursday night was useful. Create a quick list of what you think you can do with each problem; whichever list is longer, go with that problem (one group spent a lot of time on Thursday on one problem and then switched).
4. Assign tasks based on individual team member's strengths.
5. Committee writing worked very well and took pressure off of the "main writer". Didn't want different sections of the paper to sound as if they were written by different people.

6. sharelatex.com – online latex compiler; for free, two people can work on the same .tex file (can't compile pictures, but useful for main body); everything color-coded (math mode, text, etc), better error descriptions, more user-friendly
7. No issues with not going to class (professors mostly supportive with make-up tests, etc)
8. If you can get the writing done Sunday, then polishing on Monday is low-stress
9. One group saved the abstract and references for Monday
10. Use scale function in LaTeX instead of resizing images manually
11. `\begin{figure}[h]` h – here, t – top, b – bottom, ! – ignore rules --- h! worked well for image placement
12. Starbucks doesn't open until 1pm on Sunday.
13. Make sure to have plenty of snacks handy (especially for staying awake late at night).
14. Longest shifts were 12 hours at a time.
15. As the research person, don't spend too long reading an article you don't immediately understand (wasted time on an advanced PDE model).
16. 5-minute brain breaks were very useful – walk around Bancroft, etc.
17. Making a daily to-do list to get through each day added motivation, gave a well-defined stopping point.
18. Consulted an outstanding paper frequently for what goes in abstract, introduction, etc.
19. Make sure students “officially” know the Bancroft computer lab code – run through Becky for paperwork.
20. Make the sign on the Bancroft door bigger – people still came in and the team had to kick them out.
21. For Bancroft, front door was unlocked but side doors were locked.
22. Don't leave stuff written on the boards in Sims overnight – gets erased by custodians!

### **COMAP 2013 Advice for Future Participants**

1. 12 hour days (10am-10pm) worked well!
2. Stay healthy!
3. It was beneficial to think on one problem overnight to decide if it's really the one you want to work on.
4. Leave more time than you think for editing!
5. Space out writing throughout – write up assumptions, etc. on Friday if possible.
6. One team hadn't started results, testing model until Monday. Should have started earlier!

7. Not going to class gave extra time to work on model.
8. Going to work was a nice break; something mindless to focus on. Shift in middle of the day allowed material to stay fresh when coming back in the evening.
9. Play music, watch stupid YouTube videos, take a 30 minute break, etc. to stay sane!  
One teammate had a dog in the lab which was a great de-stresser!
10. Let yourselves take a mental break from the competition while eating.
11. Make sure you're aware of requirements for merging into single pdf, etc. Allow time for attaching files, compiling LaTeX issues, etc.
12. Use grammar review sheets, APA citation handouts, etc!
13. Very helpful to take time to show how to compile .sty files, etc. to use LaTeX on desktops.
14. Try to spread the message to professors about COMAP going on to be lenient with course assignment deadlines.