How To Teach Research

- Dijkstra’s three rules.
- My experience as a grad student at Texas: sink or swim.
- My approach here:

  "Learning how to do research" really means learning how to ask the right questions. If you are in grad school, you already know how to answer hard questions.

- Your experiences?
Finding a Thesis Topic

- Find a research area that suits you, gives you joy.
  - Classes help here.

- Read voraciously in chosen area.
  - Get a sense of where the area is heading.
  - Look for open problems in papers.
  - Pay careful attention to conference talks and keynotes and think of how you could extend that work.
  - Schedule sufficient think time.
    - Can get boring, so write down ideas or discuss them with someone.

- Concentrate first on paper topics.
  - Your dissertation topic will probably take care of itself.
Finding a Thesis Topic (Cont’d)

- Have some **tenacity**.
  - Giving up is the easy way out.
  - I tell my students: The “sin” lies not in failing to produce results, but in failing to try to produce results.
  - When the results aren’t coming, continuing to try is hard.
    - Everyone goes through this.
    - People who succeed at research don’t give up!
  - How do you snatch victory from the jaws of defeat?
    - Try redefining the problem, talk to people, make some simplifying assumptions to get started,…

- Your experiences in finding a topic?