What is this course about?

- How does computer science and the innovations it engenders influence and affect the world? Impact
- How does the Internet work, who governs it, what does it enable? Internet
- What can be created using techniques from computing and computer science? Creativity

What (else) is this course about?

- A flood of information is changing everything about science, policy, society, and the world: Data
- Software, we simply can’t function without it: Programming
- Scaling, Automation: Algorithms

“Our species needs, and deserves, a citizenry with minds wide awake and a basic understanding of how the world works.” — Carl Sagan
Seven Big Ideas

Abstraction
Algorithms
Creativity
Data and Information
Internet
Global Impact
Programming

Course logistics: accessing info

- See Sakai and the course website for full details
  - http://www.cs.duke.edu/courses/spring15/compsci092/
  - https://sakai.duke.edu/portal/site/compsci92-spring15

- Sakai
- Piazza
- Website

Course logistics

- Two week thematic cluster
  - Readings, labs, technical tools related to theme
  - Labs, homework, and assignment anchor cluster

- Readings and homework each week
  - Online quizzes, in-lab questions related to topics/reading
  - Wednesday class related to readings/questions
    - Lecture will be active and participatory
    - Friday will be similar, may lead into next lab

More course logistics

- Midterm and Final, both inclass and online
  - Not memorization, about applying concepts
  - Final can be taken in any three-hour block

- Performance tasks: related to national pilot
  - Origin, new AP course: CS Principles
  - Required collaborative and individual

- Internet and computational projects
  - Individually and in groups
Class work

- Forms, re-enactments, and more

Google/Apple Patent Smart Cars

- Video http://1.usa.gov/1w5AExa
  - What does this URL tell you?

- What is a smart car, Duke Connection
  - Why are Google and Apple interested?
    - https://www.youtube.com/watch?v=7Yd9Ij0INX0
  - Why are smart cars a good idea? Bad idea?:
    - Who drives a smart car? Why less accidents?
    - What are the downsides?
    - Ethical considerations?

Bitcoin: mining, use, security, ...

- Article: http://econ.st/1DG1ylg

- Why is Bitcoin in the news?
  - What is a (virtual) currency?
  - Why do we need it?
  - How do you "make" or "mine" a bitcoin?
  - Duke connection: http://ti.me/1aljaH5
  - Duke connection: http://onforb.es/1xPOOs0
What is a URL?
- What comes after the ?
- How many are there on YouTube?
- How many could there be if all "like this"?

What is entailed in watching a YouTube video (on your desktop, phone, ...)
- How does your device know where the video is?
- How does the video get to your device?
- How did the video get on YouTube?
- What if the video has a song by Prince in it?

Exploring Streaming Video and more...
  - Answer with a different partner/team

Digital Copyright
- Perfect 10 v Google and Amazon
  - Fair use? Transformative use?
  - DMCA safe harbor
- Ethics and Legality of Shake it Off Parodies
  - https://www.youtube.com/watch?v=NoHp2Rq8sMI
  - https://www.youtube.com/watch?v=5p483f5eBTs
  - https://www.youtube.com/watch?v=c1wbbhTXKloQ

Internet Governance
- Article: http://wapo.st/14CLuFm
  - When, where, how was Internet created?
  - What is the Internet?
  - What is the Internet of Things, ...
- Internet Standards: who and how?
  - IETF: Rough Consensus and running code
  - ICANN: who should get nanogoogle.com?
- How is Internet different from telephony
  - Network, governance, standards, use?