# So you've decided to get a Ph.D....
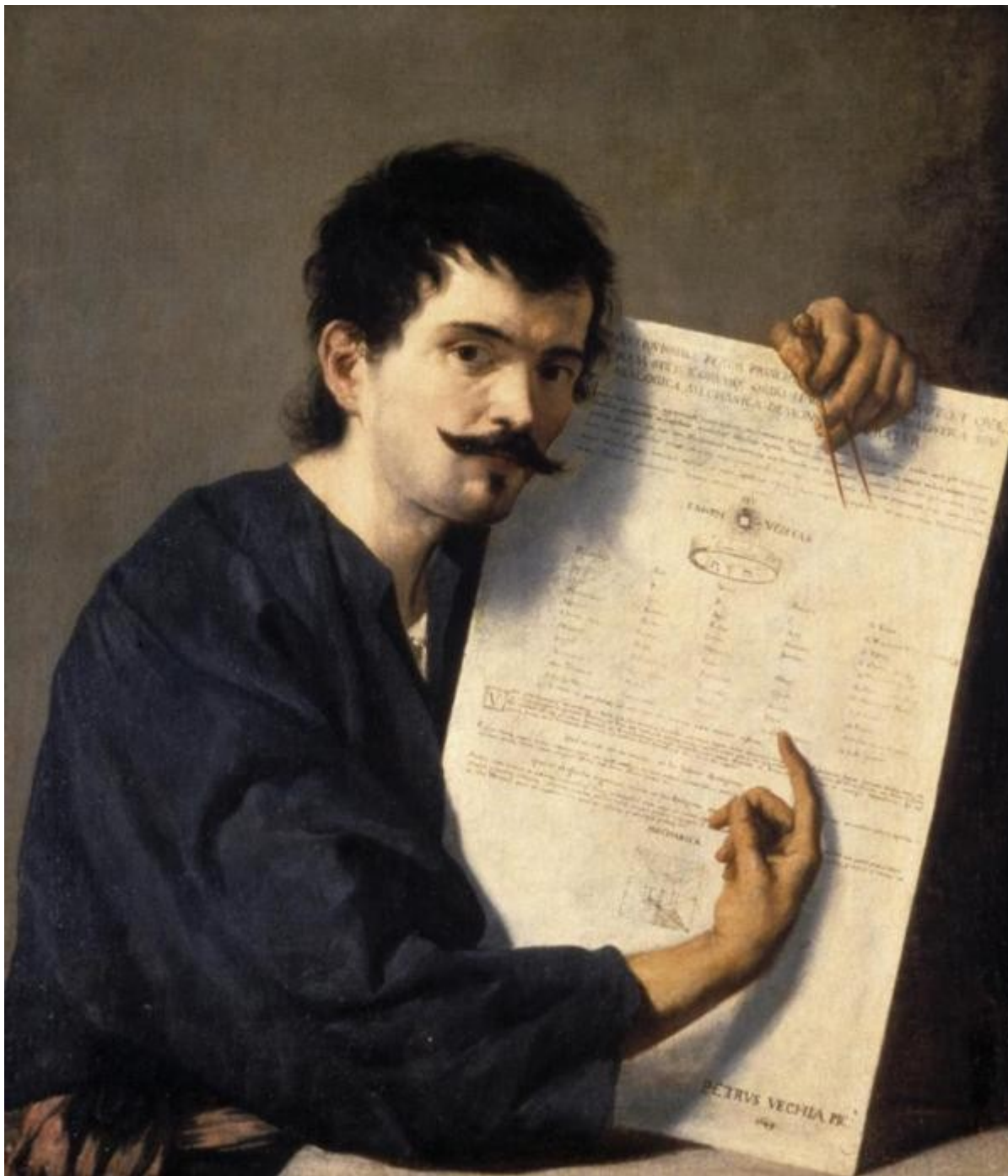
# Doctor of Philosophy

- Highest academic degree

- Called "Dr."

- Get to wear funny robes and sometimes funny hats at graduation

- Required for many research-centered positions



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# A little history from Wikipedia [1]

- First Doctor of Philosophy degrees awarded in Germany in the 1650's

    – No research component

- 1810: University of Berlin Arts faculty (called faculty of philosophy) demanded a research component, *i.e.*, a dissertation

- 1861: Yale does the same, by the beginning of the 20<sup>th</sup> century Ph.D. is a common degree

Erhard Weigel, one of the first known Ph.D.'s [1]

Pietro della Vecchia [Public domain], via Wikimedia Commons

https://www.humanitiesindicators.org/content/indicatordoc.aspx?i=46

See the figure titled, "II-12d: Racial/Ethnic Distribution of 2015 Doctoral Degree Recipients, Selected Academic Fields".  Also see:

https://www.nature.com/naturejobs/science/articles/10.1038/nj7655-517a

# The dissertation

- A *seminal* contribution to the body of knowledge in computer science

- Typically several chapters, arranged around a thesis statement

- You become a "Ph.D. Candidate" after you successfully defend a proposal for a dissertation topic

- You become a "Ph.D." after you defend a dissertation

# The research component

- Ph.D. is *fundamentally* different from M.S.

- Research positions

  - Academia (research or teaching positions), government, labs, NGOs, industrial research

- What do you plan to do with your Ph.D.?

- Postdoctoral researcher

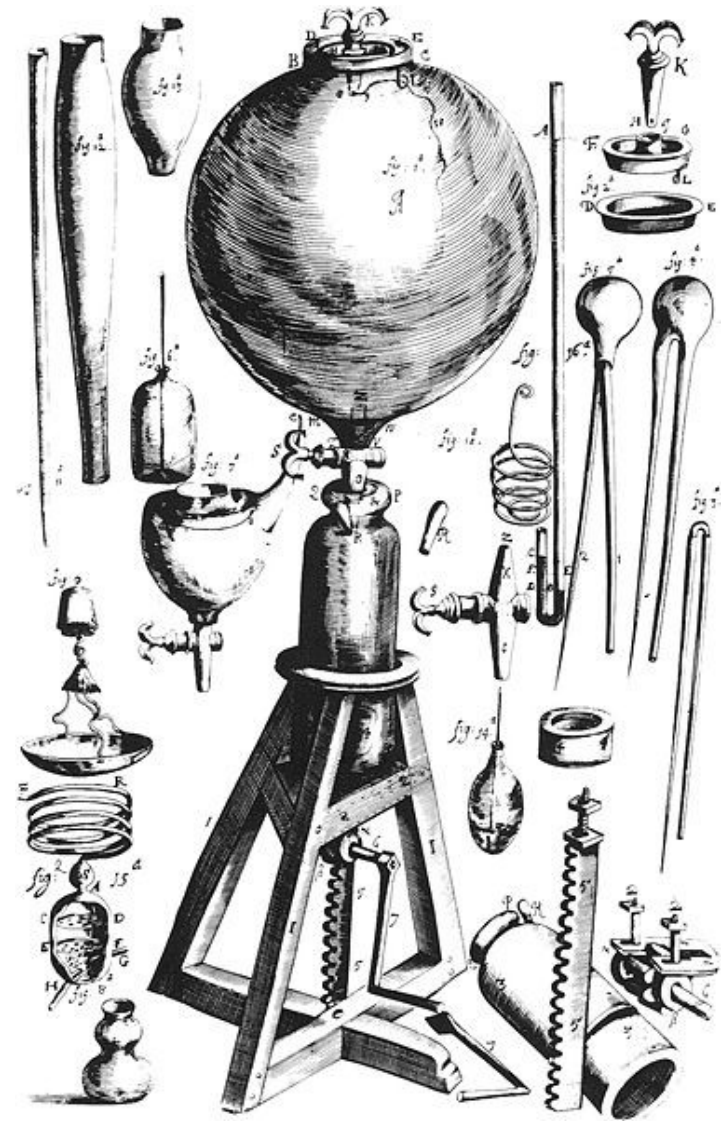  - (not required in Computer Science)

# Academia

- Typically Assistant Professor for six years (tenure-track but not tenured), Associate Professor for six years (tenured), and then Professor

  – Lots of variation

- Tenure is about academic freedom

- According to Wikipedia [3], "Academic freedom is the conviction that the freedom of inquiry by faculty members is essential to the mission of the academy"

  – Should only be fired for "gross professional incompetence or behavior that evokes condemnation from the academic community itself" [3]

# Tenure

- Arguments for: academic freedom, keeps faculty salaries lower [3]

- Arguments against: reduced academic freedom before tenure, reduced effort of tenured faculty [3]

- Typically you submit a "tenure case"
  - Research, teaching, and service

Benjamin West [Public domain], via Wikimedia Commons



By Robert Boyle [Public domain], via Wikimedia Commons

# Empirical science (preview)

- Robert Boyle and the Royal Society

- Ben Franklin and the American Philosophical Society

- This is why your dissertation defense is a "defense"

# My thoughts about the Ph.D.

- What Dr. Doug Burger told me about faculty (paraphrasing):  faculty are "entrepreneurs"
  - TRIPS architecture
- Same is true of all Ph.D.'s, in my opinion
- Having a Ph.D. is about more than employment, in my opinion

# Discussion

- What are your general thoughts about the Ph.D. degree?

- Are Ph.D.'s being "handed out like candy" these days?

- Is tenure a good thing?

- Is academic freedom really needed in computer science?

# Assignment #1

- Due Friday, August 31st in class (bring a printed copy to class)

- Write a paragraph about who you are and what you're passionate about, in general and not related to research or your Ph.D. studies

- Write a second paragraph about what your plans and passions are for the research you plan to do for your Ph.D.

- Ideally these two paragraphs will be cohesive and relate to each other, but there's not a right or wrong way to do the assignment

- Put your name on it!

# Sources

- [1] https://en.wikipedia.org/wiki/Doctor_of_Philosophy
- [2] https://en.wikipedia.org/wiki/Academic_tenure
- [3] https://en.wikipedia.org/wiki/Academic_freedom
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