This American's thesis: The prime purpose of universal education is the preservation of the Republic. What we have is not up to today's emerging challenges.

We have a workable consensus that a system of laws and courts, constrained by an institutional flywheel (the Constitution), is sufficient to hold the system together. So far so good, with a few major glitches along the way.

But the environment is changing, in large part because of increased scales and coupling. The Internet has brought us the Cambridge Analytica/Facebook challenge to the (admittedly only approximate) peaceful coexistence of free speech and political freedom. That's a new problem.

But there are more familiar, older issues that are changing qualitatively. Here are two. 1)Interactions of national economies/energy/political systems and global climate through the atmosphere. 2)An increasingly coupled global economy/ polity through trade, finance, and (surprise!) migration. Our political/legal institutions don't understand these things, and they are dealing with them terribly. Existing language doesn't even work well ("sovereignty" and "liberty", "left" vs. "right", for example).

Problem 1. These are emergent phenomena. The reality of emergence must be understood by the general public but is absent in the public conversation, because it's absent in general education.

1a. Start with Conway's Game of Life (no relation) in primary school. Later on add the cellular automata in Stephen Wolfram's "A New Kind of Science". Both of these could be taught with a

computer in front of every student, able to play with his/her own initial conditions. Growing minds will be blown.

1b. I have been very impressed by the computerized flow simulations I learned from Jay Forrester (see "Industrial Dynamics"). Again, this could be taught with a computer in front of every student. Simulate simple economic exchanges and traffic jams. Show how they can exhibit weird, totally unexpected behavior depending on network and node characteristics like gain, delay, and feedback.

Problem 2. This is harder, and will be controversial. Our legal system is held together by lawyers using as their only tool reasoning with textual language. (I can attest from experience that a good patent lawyer can reason spectacularly well about a system she doesn't understand using language alone, but that is very rare.) Language alone cannot handle the system-level challenges our society is facing. We need a new way to reason at the system level within our legal/political system. This will take generations.

Problem 3. We are witnessing right now that the way we organize political resources around affinity/interest groups works against the general welfare in times of stress ("polarization"). This antipattern needs to be understood at the system level.

Problem 4. There is a traditional relationship among the market values of labor, capital, and knowledge that is the basis of our social contract. It is changing radically because of new manufacturing and information technologies. Before industrialization most people could survive from their own labor. Then they were forced to move to the cities and had to

depend on employers to give them jobs. Now the value of the labor input into production is radically decreasing. The talk about guaranteed basic income is ignoring the system-level question of how wealth flows from capital to the general population.

These are all system problems that have not been dealt with at the system level. Our traditional approach has been to muddle through. But can muddling at the local level continue to deal with problems at the increasingly more complex system level?

The philosopher-king/uberhero solution is not sustainable. The only sustainable solution I know of is (1)universal education that comprehends system thinking, embedded in (2)a sustainable polity that values it. We need to get started on both.