George Washington apprenticed as a land surveyor, Paul Revere as a silversmith, and John Adams and Thomas Jefferson became lawyers via apprenticeship. But America is a very different country today. While apprentices have increased in number over the past generation, their proportion of the U.S. workforce (0.32 percent) is lower than it stood after World War II and only at one-eighth the current level in the UK and Australia. Meanwhile the Central European giants of apprenticeship—Germany, Switzerland, and Austria—do 10 to 15 times better than the United States.

Why? Originally, American colleges like Harvard and Yale were schools for training clergy. Then, starting in the days of
Adams and Jefferson, college became a way for the emerging merchant elite to demonstrate their sons were special (Our sons are college graduates; they shan’t be working on a farm or in a mill). Fast forward 250 years to a time when nearly everyone thinks their children are special, and it’s no wonder America has swallowed the college-for-all pill. While the word “apprentice” comes from the French apprendre (to learn), college became the sole respectable pathway from high school to a good first job.

That pathway has worked for some, and for a while. From the 1960s to the turn of the century, America’s colleges were mostly affordable and did a reasonable job preparing students for work. And for the attractive careers, a college degree signaled sufficient cognitive skills, problem-solving skills, communication skills, persistence, and the go-along-get-along attitude required in a modern workplace. The cherry on top was that it felt good. The ethos of college—equipping young people to fulfill their potential in whatever direction it may take them—is the ethos of America.

But about 25 years ago, things began to change. While tuition and fees were growing every year at double the rate of inflation, digital technology transformed the economy. Suddenly the “good jobs” college grads were hoping to land were different than they had been a generation before. Hiring was undergoing a similar seismic shift. The result today is a crisis of underemployment that accompanies the crisis of college costs. While there are millions of great jobs that are purportedly entry level, more than 40 percent of college graduates find themselves underemployed, and student-loan forgiveness has become the dominant higher-education policy debate. Adding 40 percent of underemployed graduates to the 40 to 50 percent of students who enroll, typically take on student loan debt, and fail to complete, it’s clear that college-for-all isn’t working for all, or even a majority, of students.

It’s fair to say that the typical student matriculating today will graduate but will be both indebted and underemployed.

This predicament is not all the fault of colleges. Digital transformation has fundamentally changed the nature of work, including what employers seek in entry-level employees. Topping the list are specific digital and business skills that are much harder to learn in a classroom than by doing. In job descriptions, employers list skills that few candidates have—including data analytics and proficiency in software such as Workday and Salesforce. This is the “skills gap.” Employers also want experience; there are many ways to become a Trailhead-certified Salesforce administrator, but not many employers are looking for a newly minted Salesforce admin with no relevant work experience. In addition to the skills gap, there’s a growing experience gap that AI is likely to turn into a chasm.

Is there a way to close the skills and experience gaps simultaneously? How about apprenticeship: earn-and-learn positions that pay a living wage while delivering formal skills training and experience? Apprenticeship also has the potential to solve lots of other problems, including socioeconomic immobility, frustration at being shut out from economic opportunity, geographic mobility, workforce diversity, and—yes—student loan debt. Combining paid work with relevant training levels the playing field for people from underprivileged backgrounds, along with underrepresented-minority, first-generation, LGBTQ, and rural Americans.

It turns out that people love the idea of apprenticeship. In a 2018 survey, 92 percent of Americans had a favorable view. California Governor Gavin Newsom wants 500,000 apprentices in the state by 2029 (a seven-fold increase). New York City Mayor Eric Adams wants to increase the number of apprenticeships in the city to 30,000 by 2030. Another survey found that given the choice between a full-tuition college scholarship for their child and a three-year apprenticeship leading to a good job, most parents would opt for the latter. (Most, but not all—if both parents have graduate or professional degrees, they’d still send their kids to college. But we don’t need to worry too much about these kids.)

Not everyone is loving college as much these days. In the past three years, college enrollment has dropped by 1.4 million. What are young Americans doing instead? They’re not becoming apprentices. They’re working frontline jobs or attempting to become social media stars. But these paths aren’t likely to build the human capital they need to launch stable, successful careers. What they need are jobs where they gain in-demand skills and experience. And given the unprecedented political, global-health, and economic uncertainties that have dotted and spotted their youth, they’re more willing than prior generations to commit to a multiyear training pathway that’s a sure thing, even if it means earning less for a while. Young Americans would prefer to even things out: have the lows not be so low, and the highs not so high. Many are willing to give up on the American Dream; they’d settle for Canada’s.

In terms of options for career launch, earn-and-learn alternatives like apprenticeships fit Gen Z to a T. The problem (with a capital P) is that there aren’t nearly enough of these opportunities. America needs more apprenticeships now than ever before—not only for recent high school graduates but for high school students and graduates of community colleges, four-year colleges, and even graduate programs.

Underinvestment

Why is America punching below its apprenticeship weight? Because we’ve done comparatively little in this country to grow
Despite slight wage compression driven by the Covid-19 pandemic, the economic returns to college degrees remain close to an all-time high.

The popular perception of colleges, especially one as ancient as the University of Oxford, is that of a cloistered community out of touch with the concerns of everyday workers.

The wage gap

In a recent Forbes column, Craig takes on what seems to be his personal white whale: the widely shared understanding that college degrees have significant economic value. Craig’s response is a head-on assault on Georgetown University’s Center on Education and the Workforce (CEW), a respected research institute headed by veteran economist Anthony Carnevale. Under the headline “The College Premium Isn’t What Georgetown Says It Is,” Craig allows
apprenticeships beyond their cozy home in construction. In Europe and Australia, it’s common to find apprentices in financial services, healthcare, and technology. That’s no accident, but rather a result of government policies and incentives to establish a viable alternative to school-based, tuition-based, and debt-inducing postsecondary education. Current funding for apprenticeship is a fraction of what government spends on the “train and pray” model—providing education and then cutting people loose to find employment on their own. Every year, America invests over $500 billion of taxpayer money in 4,000 accredited colleges and universities. That includes federal student aid, federal funding for research, and state support of public university and community college systems. It doesn’t include hundreds of billions in additional spending on making income-driven repayment more generous, targeted loan forgiveness, or progressives’ holy grail of blanket student-loan forgiveness. Meanwhile, total spending on apprenticeship is under $400 million. That’s a ratio of 1,000 to 1. The average apprentice receives about 2 percent of what taxpayers spend on the average college student.

Every other developed country vastly outspends the United States in supporting earn-and-learn. As policy, such investment is not only smart but just. In A Theory of Justice, the political philosopher John Rawls argued that we ought to care about justice, which he defined as fairness. If we did, we’d establish a different social contract. New organizing principles are most judiciously arrived at by positing what Rawls called the “original position”: without knowing anything about the life you’re about to be born into (that is, no certainty on abilities, family situation, or income), what rules would you choose? Rawls’s answer is that you’d first ensure U.S. Constitution–like basic rights and liberties. Then, because you’d have an even chance of being disadvantaged and some likelihood of ending up at the bottom of barrel, you’d set up a society that would protect the least advantaged.

How would Rawls evaluate our current organizing principles for postsecondary education and career launch? While multyear degree programs provide revenue predictability for colleges and universities, they don’t seem to be working very well for the least advantaged students. Six-year college completion rates for Black, Hispanic, and Native American students range from 40 to 50 percent. Pell Grant recipients finish college at rates 10 to 15 percent lower than the success rates of their higher-income peers. That means that more than half of all degrees awarded to traditional-age students go to children from families with household incomes of at least $116,000. And while 50 percent of 24-year-olds with family incomes over $90,000 have earned bachelor’s degrees, less than 6 percent of those from families with incomes under $35,000 have achieved that. Overall, students from top-quartile-income families earn bachelor’s degrees five times more frequently than bottom-quartile students.

If today’s original-position spirits know they’re going to be born in America, they’re hoping to be dumb and rich instead of bright and poor—rich kindergarten kids with bottom-half test scores have a 70 percent probability of reaching the middle class or beyond, whereas poor kids with top-half test scores only have a 30 percent chance.

College completion for disadvantaged students is inextricably bound up with affordability: the more costly the degree pathway, the more low-income students stop, drop, and roll out the door. For more than 30 years, colleges and universities have increased tuition at roughly double the rate of inflation—and recently, they’ve boosted room, board, and student fees at double the rate of tuition hikes. Education Trust estimates that, in nearly every state, tuition at public colleges is at least $3,000 too high for in-state, low-income students to afford, and more than $10,000 too high in New Hampshire, Pennsylvania, Alabama, and South Carolina.

The problem is that tuition-based models for career launch leave the worst-off in debt and unemployed or underemployed. Why? Because this system fails to guarantee employment outcomes. Far too many—perhaps a majority of—disadvantaged students currently graduate from non-job-oriented majors into unemployment or underemployment.

In contrast, earn-and-learn models like apprenticeship don’t lead to these results. Apprenticeships are full-time jobs that pay a living wage, with built-in formal and informal training, wage progression, and career pathways.

Uninformed Buyers

Another problem with tuition-based career-launch models is that the process of selecting a degree program is hobbled by “asymmetric information.” The problem of information asymmetry was best explained by economist George Akerlof in his Nobel Prize–winning 1970 paper “The Market for ‘Lemons.’” Used car salesmen clearly have more information about the cars they’re peddling than potential buyers do. Akerlof recognized that asymmetric information “was potentially an issue in any market where the quality of goods [or services] would be difficult to see by anything other than casual inspection.”
Craig directs his ire at several CEW reports that quantify the lifetime earnings benefit to college ($1.2 million more than high school graduates, per the center’s 2021 analysis) and project strong future employer demand for workers with degrees. He asserts that CEW’s college-wage-premium reports are marred by “major methodological problems,” chief among them a failure to account for “self-selection in the college-completing population.” In other words, he suggests, gaps in wealth, health, family support, and both cognitive and noncognitive skills mean that some people would likely enjoy an earnings premium whether or not they attended or graduated from college. Then the name-calling begins. Craig calls the authors of the CEW report “propagandists” who are simplistically confusing correlation with causation.

Pivoting to the center’s November 2023 report on growth in jobs that require postsecondary education, Craig terms this finding “degree disinformation.” His rebuttal leans heavily on the recent removal of degree requirements from job descriptions by more than 16 state governments and many corporate employers. He concludes by observing that only one of the four authors of this most recent CEW report “has any private sector experience.” Making matters worse, that coauthor is a former journalist at the Chronicle of Higher Education, which Craig terms “hardly a pillar of free enterprise.”

Well.

The financial benefits of building human capital in the form of higher education have been well established for years. That doesn’t mean the exact extent of those benefits, or the reasons for them, are universally agreed upon and should never be questioned. But a credible, serious discussion of the matter would require acknowledging that many other eminent analysts, well beyond Craig’s chosen targets at Georgetown’s CEW, have drawn similar conclusions. MIT economist David Autor, for example, wrote in Science about the doubling of the earnings gap between the median college-educated and the median high-school-educated full-time worker in America between 1979 and 2012: “The economic payoff to college education rose steadily throughout the 1980s and 1990s and was barely affected by the Great Recession starting in 2007.” In the same vein, economic historian and Nobel Prize winner Claudia Goldin and her coauthor Lawrence F. Katz, another leading labor economist, wrote in their landmark 2008 book The Race Between Education and Technology that “the marginal individual today who does not graduate high school, who does not continue to college, and who does not complete college, is leaving large amounts of money lying on the street.”

What about Craig’s specific critique that CEW fails to account for self-selection? It’s a valid point to raise, and a range of thoughtful analysts have studied it, including Jaison R. Abel and Richard Deitz, authors of widely read articles for the New York Federal Reserve on the college-wage premium. Yet they, too, conclude that the premium is real. Here’s what they wrote in 2019:

We can’t rule out the possibility that some of what we estimate as the return to college is not a consequence of the knowledge and skills acquired while in school, but rather is a reflection of the innate skills and abilities possessed by those who complete college. However, our estimates are in line with an extensive body of research that is better able to correct for such possibilities. In fact, one study examining the return to college for academically marginal students indicates that the payoff to college for such students is as large as our estimates suggest, if not larger.

That study, by Yale economist Seth D. Zimmerman, examined students who fell just above and just below the academic requirements for admission to Florida International University. Those who attended college had better long-term economic outcomes than those who didn’t, particularly men and people from low-income households. Another study that attempted to control for student characteristics by looking at similar populations who do and don’t complete college, published in the Journal of Labor Economics, also found positive economic returns to higher education. The researchers used data from 13 public universities in Ohio that dismiss students below a certain grade-point-average cutoff. They found that low-performing students just above the cutoff who persisted to graduation recouped their educational investment and saw substantial earnings gains eight years after the dismissal of their similar classmates who were just below the cutoff.

More broadly, Craig’s core claim that the college-wage premium is driven by the characteristics of those who attend and graduate is hard to square with the surge in the financial returns to college that occurred during a period when many more Americans were earning degrees. Analyst and author Kevin Carey of New America captured the phenomenon nicely in a 2011 essay in The New Republic. He noted that the much-discussed prediction by economist Richard Freeman that overproduction of college degrees would lower wages for
Imagine a nation where we didn’t have to forgive $400 billion in student loans. The American Dream would be renewed in an Apprentice Nation.

besides college—let them make better decisions about how to acquire the additional cognitive skills they’ll need. And this means resequencing: instead of high school to college to work, we should reorder the progression as high school to work immediately after high school could allow graduates to gain:

■ work experience
■ confidence in their ability to support themselves
■ soft skills
■ insight into their own interests and strengths
■ information on specific cognitive skills they need to attain their career goals.

The key obstacle to realizing this new paradigm is that, as my friend Ted Dintersmith, author of What School Could Be, put it, “we’ve set up a college or Chipotle choice for young Americans: go on to college or get a crappy job in a fast-food restaurant.” For far too many, there’s nothing in between. So, disadvantaged students are forced to choose between unbearable risk and unbearable jobs, that is, frontline dead-end jobs. That’s not a choice Rawls would support.

The biggest downside of earn-and-learn isn’t the risk for students. It’s the challenge in building the infrastructure to support it. Apprenticeships require willing employers, training providers, and an organization to coordinate it all, setting up and running the program and doing its level best to hide the wiring from everyone else. But if we care about justice, the complexities are well worth tackling.

Imagine a nation with apprenticeships across all sectors of the economy. Imagine a nation with as many large-scale apprenticeship programs as colleges and universities. Imagine a nation where apprenticeship is as prevalent and respected as college, where every American not only has a direct, clear, and reliable pathway to a lucrative career, but also a paid pathway that doesn’t involve financial risk. Imagine a nation where we didn’t have to forgive $400 billion in student loans. It’s no exaggeration to say the American Dream would be renewed in an Apprentice Nation.

Saving students from the limited choice of college or Chipotle would benefit everyone, not just the least advantaged. Real post-high-school earn-and-learn options across healthcare, financial services, tech, logistics, manufacturing, and other sectors would resuscitate career and technical education and career discovery in high school. Such opportunities would reinvigorate youth workforce participation, leading to much-

College or Chipotle?

A new norm (or at least a socially acceptable option) of full-time work immediately after high school could allow graduates to gain:

- work experience
- confidence in their ability to support themselves
- soft skills
- insight into their own interests and strengths
- information on specific cognitive skills they need to attain their career goals.

Despite consensus around the benefits of expanding apprenticeships, the road to making that a reality isn’t simple. If America is to dramatically expand apprenticeships beyond construction, we’ll need a dramatically new approach to workforce development, and we should expect changes to how we learn and how we get hired. The White House and the Department of Labor must recognize that because apprenticeships are unlike training programs—they’re jobs first and foremost and therefore a much more effective pathway to economic mobility—they should be funded and treated differently from the flotsam and jetsam of workforce development. That means enacting policies that get employers to say yes to apprenticeships and yes to hiring apprentices—and not excessive regulation, like the Department of Labor’s recent 779-page notice of proposed rulemaking that would add dozens of additional hoops to jump through in order to register an apprenticeship program.

We have a long way to go on both increasing incentives for apprenticeship creation and reducing barriers. But the prize—socioeconomic mobility and competition that will make our colleges more responsive to student needs—is well worth the effort.

Ryan Craig is managing director at Achieve Partners and co-founder and vice chair of Apprenticeships for America.
CEW, which Craig caricatures as an unreserved cheerleader for college degrees, is in fact known for the nuances of its detailed findings about varying economic returns based on field of study. “College typically pays off,” Carnevale writes, “but the return on investment varies by credential, program of study, and institution.” CEW also takes pains to warn students of the risks of taking out loans without graduating, thus missing out on the higher earnings that would help them repay their debt.

**College Degree Required?**

As for Craig’s contention that employers’ preferences for degrees are “changing quickly,” so far there isn’t much evidence that dropping degree requirements has altered their hiring practices. When LinkedIn released an analysis of job listings and hiring trends on its massive network in August 2023, for example, it found that many more employers have indeed begun to emphasize skills over degrees in job listings. From 2019 to 2022, the technology, information, and media industry had a 240 percent faster growth rate in job posts without professional degree requirements than in those that do require degrees. However, actual hires of individuals without degrees grew just 3 percent. Similarly, a February 2024 study by the Burning Glass Institute and Harvard Business School found that “for all its fanfare, the increased opportunity promised by Skills-Based Hiring has borne out in not even 1 in 700 hires last year.” This pattern could certainly change, particularly if today’s push for skills-based hiring yields a more robust and well-researched set of alternative credentials with which to measure and communicate the skills that individuals have developed. But for now, what economists call revealed preferences for degrees seem to be alive and well.

The truth is that the enormous college-wage premium that emerged over several decades did not stem from top-down central planning or from employers insisting on rigid degree requirements in job listings. As one might expect a veteran of, ahem, the private sector to recognize, strong financial returns to higher education developed organically, based on hiring decisions by employers in a market economy who seem to appreciate the mixture of broad and targeted skills that those who earn college degrees so often possess. Despite the rhetorical appeal of asserting that colleges are out of touch with the real world, a huge proportion of undergraduates study subjects with immediate practical career value, from business, nursing, and engineering to computer science and teaching.

Even the much-lamented phenomenon of underemploy-

Nowhere in his essay does Craig discuss what college graduates earn or the persistent gap between their average annual wages and those of Americans who hold only high school diplomas.

Ben Wildavsky is a visiting scholar at the University of Virginia School of Education and Human Development and host of the Higher Ed Spotlight podcast.