Ohio and the World, 1753-2053

Parker, Geoffrey, Sisson, Richard, Coil, William Russell

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we are all familiar with the so-called “a-ha” moment, a time when inspiration strikes or the solution to an intransigent problem suddenly becomes clear. I must confess that as I started to prepare this essay, I experienced an “Oh, my God!” moment. That was when it hit me. I had promised that, in keeping with the theme of looking at Ohio over fifty-year intervals, I would attempt to describe Ohio fifty years from now. After several sleepless nights fretting over the impossibility of my assignment, I had an “a-ha” moment. I recalled the wise counsel of Edgar Fiedler, a Conference Board economist, who said, “Give them a number or give them a date, but never give them both.”

I quickly concluded that it would be foolish, especially for someone trained as a theoretical mathematician, to try to predict 2053 with any degree of specificity. So instead I shall attempt to identify issues that will influence Ohio’s quality of life over the decades leading up to 2053. In particular, I will share some thoughts and projections on the twenty-first century—globally and in Ohio; describe two contrasting futures for the Buckeye State; and suggest how the more attractive of those futures might be realized.

OHIO TODAY: REFLECTING IN PAST GLORY

Before considering the twenty-first century, however, we should ground ourselves in yesterday’s and today’s Ohio. The previous chapters have reminded us of Ohio’s history, much of it proud:
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- David Edmunds noted that Ohio in the eighteenth century was a key region for the British and French, that the American government needed Ohio’s land, and that the Shawnee considered Ohio “the Center of the World.”
- James Horton added that “Ohio stood at the intersection of emerging national tensions,” “a borderland between slavery and freedom.”
- Eric Foner informed us that, as early as 1870, Ohio ranked fourth among the states in manufacturing.
- Kathryn Kish Sklar, born in Columbus, described Ohio's leaders in the Progressive Era who created a “civil society.”
- James Patterson noted that even as outsiders venerated such leaders as Edison, Goodrich, Firestone, Procter, Gamble, and Kettering, “with the perspective afforded by hindsight, we can see that the seeds of . . . serious economic decline were already developing.”
- Lastly, Herbert Asher effectively raised a number of troubling political and economic issues that face the state today.

Looking back, Ohio has had its share of pioneers and problem solvers—from its early settlers to its farmers, immigrants, and industrialists and from its abolitionists to its proponents of women’s suffrage. Today, Ohio offers many wonderful attributes—including huge talent and potential, rock-solid midwestern values, a culture of personal graciousness and warmth, a marvelous can-do spirit.

Despite these attributes, however, since 1953 Ohio has entered a period of economic decline. Its industrial image, once so appealing, holds less luster now, and the signs of economic stagnation are widespread. At the risk of repeating some of Herbert Asher’s points, I think it is important to describe briefly Ohio’s steady slide from economic leadership to mediocrity, seemingly headed inexorably toward something worse.

In personal income, Ohio continues to lose ground. In 1960, it ranked sixth in personal income; in 2003 it ranked twenty-fourth. Ohio’s personal income growth is among the lowest in the Midwest. According to the Ohio Board of Regents, each man, woman, and child here earns almost $1,500 less than the average American. If incomes were just at the national average, Ohioans would have had a combined $30 billion more in disposable income last year. This translates into something like $1.5 billion in lost state revenues. Imagine what Ohio could do with that money now!

Ohio does not have those resources because it is mired complacently in what has been labeled the Old Economy. The Old Economy is characterized by production-line manufacturing and is blue-collar dependent. The so-called New Economy or Knowledge Economy, on the other hand, is
knowledge-based and requires a highly educated citizenry, innovation, entrepreneurship and global competitiveness. At its most basic level, the contrast between the Old Economy and the New Economy is the age-old contrast between brawn and brain.

Overrepresented in traditional manufacturing, Ohio lags behind the nation in business and professional services, research and development, and information technology—fields at the center of today's knowledge-based economy. It is telling to note that while statistically one of every twenty-four American jobs resides here, Ohio has just one of every thirty-four jobs in computer and data processing, one of every thirty-four jobs in research and development, one of every twenty-nine jobs in engineering services, and one of every thirty-two jobs in management services. As a result, Ohio has been underperforming the national economy. In the 1997–2000 period, for example, when U.S. employment was rising at a rate of 2.5 percent, Ohio was missing out on the party, with its employment rate increasing at a rate of only 1.4 percent.

At least three national groups have created methodologies to measure where states and regions stand in transitioning from the Old Economy to the New. One is the Milken Institute, whose Knowledge-based Economy Index ranks states based upon a dozen criteria that it believes are critical to future economic growth. Massachusetts ranks number one in the latest Milken index, based upon its vast research capabilities, its highly educated population, and its many venture capital investments. Ohio ranks twenty-seventh, between Kansas and Missouri. It does particularly badly in educational attainment and in academic research dollars per capita, business starts, venture capital investment and proceeds from Initial Public Offerings. In the Forbes/Milken ranking of best places to do business and advance a career, California takes ten of the top twenty-five spots. In Ohio, Columbus ranks 66, Akron, 154, Cleveland 172, Dayton 173, and Toledo 174. A second index published by the Progressive Policy Institute reaches essentially the same conclusion, ranking Ohio thirtieth overall, with an aggregate economic dynamism score of forty-fourth. In April of 2003, the U.S. Office of Technology Policy issued its third annual State Science & Technology Indicators report. Here again, Ohio's showing was lackluster at best. Out of the fifty states, Ohio ranks:

- 36th in university R and D per $1,000 of Gross State Product (GSP)
- 37th in the percentage of its workforce with recent Science and Engineering MS degrees and 34th in the percentage of its workforce with recent Science and Engineering BS degrees.
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- 26th in the percentage of households with Internet access
- 29th in venture capital invested per $1,000 of GSP
- 22nd in business incubators per $1,000 of GSP
- 32nd in the number of so-called Technology Fast 500 companies per 10,000 business establishments; and
- 42nd in IPO funds raised per $1,000 of GSP.

Taken individually, perhaps, none of these indices means all that much. Taken together, however, they are indicators of future success in a knowledge-driven economy and a high-technology world. Ohio’s relative rankings in these indicators should be cause for concern if not alarm.

Why is Ohio’s personal income on the decline, with a subsequent loss of tax revenues? Why does it fare so poorly on indexes constructed to predict future growth? A major reason, perhaps the major reason, is that Ohio is undereducated relative to the nation as a whole and compared with competing states. That is important because more than ever before, education is the key to economic growth—both for individuals and society—and to a high quality of life. A Census Bureau study found almost a $1 million lifetime earning gap between those with high school and bachelor’s degrees. The gap for people with advanced degrees is much greater. Again using Census data, the Bureau of Labor Statistics found that those with only a high school diploma will have median earnings of $28,800 a year and be subject to a 4.2 percent average unemployment rate. In contrast, those with a bachelor’s degree will earn $46,300 and face an average unemployment rate of 2.5 percent.

It is self-evident, but it bears repeating: In the knowledge age, education is the key to personal prosperity and to a vibrant state economy. A study by the National Association of State Universities and Land Grant Colleges found that each dollar of state money invested in one of its institutions returns on average five dollars to the community. Another study, done in 2000, found that greater Boston’s eight research universities provided a $7.4 billion boost to the regional economy. That, the study said, “is like having the Olympic Games every year.”

Given the importance of higher education in the knowledge age, here comes the bad news. Unfortunately, Ohio ranks thirty-ninth in the nation in the percentage of residents with a four-year degree. The problem becomes graphically explicit in a chart developed by the excellent staff at the Ohio Board of Regents, which compares the relative decline in education—embodied by the percentage of Ohio residents with at least a bachelor’s degree—with the decline in per capita income. For years, these two lines have been declining in close parallel.
One reason for this problem is that since 1970, the state’s support for higher education as a percentage of total tax revenue has lagged the national average. Based on information from the National Information Center for Higher Education Policymaking and Analysis, Ohio’s FY 2002 appropriation of state tax funds for higher education per $1,000 of personal income ranks thirty-eighth in the nation and is the lowest in the Midwest, lower even, and by a substantial margin, than its neighbor to the south, Kentucky. And finally, Ohio ranks thirty-sixth in per capita R&D expenditures at doctoral-granting institutions. Were Ohio only average in this regard, it would have an additional $300 million per year to spend on research.

The *Columbus Dispatch* put it well in a May 2001 editorial: “In the nineteenth and twentieth centuries,” the editors wrote, “Ohio made itself a leader among the states by investing in canals, railroads and factories—the infrastructure that was on the cutting edge of the industrial economy of the day. But Ohio has been coasting on its success. In the coming years, knowledge will be the infrastructure upon which modern economies are built.” The same editorial also opined that a strategy of starving higher education “will save a nickel now at the cost of not earning a dollar later.” One must reluctantly conclude that despite some notable exceptions, Ohio’s economy is stuck in the past while the world is changing—and changing fast!

**THE FUTURE: OHIO AND THE WORLD**

That is where Ohio stands as it tiptoes reluctantly into the twenty-first century, a century which is certain to be marked by even more rapidly accelerating change than we have seen to date. In thinking about Ohio’s future, another important consideration is demographic trends. These will affect the future workforce in important ways. For example, by 2050 almost all of the world’s population growth—95 percent—will take place in developing countries. We also expect a decline in global fertility, with growth rates heading toward unsustainability in the developed world, including the United States. As a result, significant immigration will be essential to prevent a sharp drop in the U.S. labor force after about 2025.

Most domestic growth will come from the minority population—which has increased over the past century from one in eight Americans to one in four. By 2053, minorities will constitute one in two Americans. In the coming decades, we will need the participation and productivity of every potential worker. A major challenge facing Ohio and the nation is that most minority groups are not presently graduating from college at anywhere near
the rate of their white counterparts—and are even farther behind in the receipt of degrees in many of the high-demand areas, such as business and management, the health professions, biological and life sciences, computer sciences, and engineering.21 This is perhaps the major challenge our nation faces in building a workforce for the knowledge economy of the twenty-first century.

What trends can we expect from the economy during the first half of the twenty-first century? Futurists tell us that genomics and biotechnology will become a significant factor both in our quality of life and in our economic growth. We stand at the dawn of a new age, approximately where the atomic age was in 1953. But rather than atoms, we are now dealing with cells and molecules. Already, something like 140 biotechnology-based medicines and vaccines are on the market, along with many genetic tests. Another 350 are in clinical trials.22 The mapping of the human genome has been completed, and the prospects for this revolution are awe-inspiring. Bone marrow cells could become brain or heart cells and regenerate damaged organs. Genetically coded pharmaceuticals will course through the body and affect only targeted organs, permitting more effective dosage and greater safety. The worldwide adoption of genetically modified crops could decrease the use of pesticides, increase global income by hundreds of billions of dollars, and feed the undernourished in developing countries. As they improve human health and longevity and make agriculture more productive, the biosciences will be ever more dependent upon information technology, which some say has had an impact on society that rivals that of the Industrial Revolution.23 The need for ever greater computing power may in the future be met not by silicon chips but by optics, lasers, molecules, or even DNA.

Exciting new fields are exploding on the scene with dazzling potential to transform our lives and drive our economic growth. From bioinformatics to nanotechnology, from photonics to micro-materials and from robotics to pharmacogenomics, we are at the dawn of a revolutionary era, one in which Futurist Wolfgang Grulke envisions a world “without poverty, without disease, without hunger.”24

Whether we actually reach that utopian state no one can say, but whatever the future holds, we can be certain that tomorrow’s world will place an ever greater premium on knowledge and connectivity, a change already being reflected in America’s workforce. For example, eight of the nation’s ten fastest-growing occupations between 2000 and 2010 are projected to be computer-related, and most require at least a bachelor’s degree.25 In 2000, for the first time ever, computers were found in a majority of U.S. homes, and the proportion of households with Internet access is rising dramatically.
ly. Amazon founder Jeff Bezos recently told *Fortune* that, “In the physical world, it’s the old saw: location, location, location. The three most important things for us are technology, technology, technology.”

Given that fact, Ohio faces a twofold challenge. It needs to transform its economy and develop sectors that will provide substantial growth while at the same time creating the highly educated citizenry required for success in the knowledge age. There is an important point I want to emphasize. The knowledge economy needs lots of talented engineers and scientists. It is a necessary condition for success. But that alone is not sufficient. Success in the knowledge age also requires a highly educated citizenry, trained in the arts and humanities, the social sciences, and the professions. In the knowledge age, society will need a citizenry capable of making informed decisions on complex public policy issues, it will need sophisticated professional services in an era of globalization, it will need innovative teachers to sustain a competitive K–12 system of education, it will need architects and planners to develop modern attractive communities, and it will need artists and humanists to sustain the artistic and cultural traditions so vital to a high quality of life. Nobel laureate Gary Becker of the University of Chicago captured this thought well. For success in the knowledge age, he said, “Human capital is by far the most important form of capital.”

How will Ohio acquire this all-important human capital? In part, it will come from Ohio residents growing up, getting educated in Ohio, and staying here. But are there enough such people to grow a vibrant knowledge-based economy? Sadly, there are not. Based upon census projections from 1995 to 2025, Ohio's population will grow more slowly than that of the country overall. And while Ohio will remain the nation's seventh most populous state, its rate of population change, at 5.5 percent, will rank forty-ninth out of fifty. Further, the proportion of Ohio's population classified as elderly is expected to grow much faster than the nation at large, which means that it will have a smaller proportion of young people entering the workforce.

Not only is Ohio's population aging, but, like the nation as a whole, it is becoming more diverse, with minorities constituting an ever increasing proportion of the workforce. Given expected worker scarcities, educated and well-trained minorities are essential to Ohio's future economic prosperity. So are immigrants. But even though the handwriting is clearly on the wall, many still do not understand the implications. Some object that 5,300 international students study at The Ohio State University. Instead, Ohio should rejoice that bright, highly motivated, and ambitious overseas students come to Ohio to learn. We should encourage them to stay and help revitalize the economy.
In summary, as things now stand, Ohio can anticipate a population that grows more slowly and ages more rapidly than the national average as well as businesses that will underperform the nation as a whole. For this prognosis to improve, it will be essential to create educational and economic opportunities that will attract younger women and men, retain talented people, and assure that minorities have every opportunity to become fully contributing members of society. Higher education is the key to making these things happen and, therefore, Ohio needs a strategy that better utilizes its colleges and universities to create a different kind of future for its citizens.

A FORK IN THE ROAD

With these comments as a backdrop, what are Ohio’s options? In the previous chapter, Herbert Asher argued that Ohio has been at the crossroads for decades. That thought evokes the familiar words of Robert Frost about roads taken and not taken. The poem, which is one of my favorites, ends with the words:

I shall be telling this with a sigh
Somewhere ages and ages hence;
Two roads diverged in a wood, and I—
I took the road less traveled by,
And that has made all the difference.30

What are the choices for Ohio? Where do the two paths lead, based upon what we know and what the experts expect? Let me present these roads as two contrasting futures.

One path requires no choice at all, simply continuing down yesterday’s road—resisting change and failing to acknowledge the forces that are fundamentally transforming Ohio and the world. It is a path of isolation in today’s global, high-technology knowledge economy. It is the path of disinvestment and decline. Because the decline has been gradual and over decades, at any given moment it is easy to overlook or ignore. But, at this point, to ignore the cumulative effect is to place Ohio’s future in great peril. Instead of merely lamenting the decline of Ohio’s greatness and enshrining it in a museum, Ohioans today should engage the world as they once did: through innovation, experimentation, and education.

President Eisenhower once said, “Neither a wise man nor a brave man lies down on the tracks of history to wait for the train of the future to run
over him." The train is building steam and, on its current path, will arrive in Ohio long before 2053:

- As the personal income of its people falls farther and farther behind the national average;
- As education levels fall increasingly below that of competitor states;
- As the talented people needed to operate a knowledge economy avoid or leave the state;
- As new businesses decide that the grass is greener somewhere else;
- As tax receipts continue to decrease and state and local government—along with non-profits—are less able to offer needed social services;
- As it is more and more difficult to uphold Ohio's legendary can-do spirit; and
- As the overall quality of life declines.

In the past, Ohio has often demonstrated economic leadership. It is, after all, the birthplace of aviation and became the rubber capital of the world. Cleveland, America's fifth-largest city only four decades ago, spawned John D. Rockefeller and Standard Oil, which became the dominant business organization in the country. Ohio has been an agricultural and manufacturing powerhouse, but while many large and important business organizations still call Ohio home, the era of national economic leadership has long passed.

The question is, in what areas will Ohio lead during this century? Will it lead in the biosciences, which, as we know, are expected to be core businesses in our economy? Not the way the state is headed today. Will it lead in Information Technology? That also appears unlikely. Perhaps some of its entrepreneurs will be the Edisons and Wright Brothers of our time. Let us hope so. But is Ohio doing all that it can to nurture them and develop high-growth fields? Sorry to say, it is not.

In contrast, many areas of the nation are developing strong competitive positions in twenty-first century fields. The Bay Area, the Boston/Cambridge, and the San Diego regions are the current centers for biotechnology. The Washington, D.C. area is not only our nation's capital; it is also the leader in the Information Communications, or InfoComm, industry. The report on Science and Technology indicators which I cited earlier writes that, "In addition to the obvious locations such as Boston, Silicon Valley, Raleigh-Durham, and Austin, we now have pockets of S&T-based economic development exploding in Minneapolis, Seattle, Boulder, and Salt Lake City." "These communities demonstrate," the report adds, "that S&T-based businesses exhibit the tendency to cluster in areas that have strong technology assets and infrastructure."
The requisite assets and infrastructure include—most especially—the presence of top-tier research universities, the caliber of institutions that Ohio State seeks to become and must become if Ohio is to prosper. Today, according to *U. S. News & World Report*, Ohio has one private university—no publics—ranked nationally in the top tier of America’s colleges and universities, three in the second tier, two in the third tier, and eight in the bottom tier. Compare that with states like Massachusetts, California, and North Carolina. And compare that with a Milken Institute report which notes that “research centers and institutions are indisputably the most important factor in incubating high-technology industries.”

What will Ohio be known for in 2053? Whatever it is, the seeds must be planted now, and many of them must be planted at places like Ohio State because the road Ohio is traveling now leads to a place no one should want to go. If these seeds are planted, there is a brighter side, that other road that can make “all the difference.” Rather than disinvestment, this is the path of investment—investment in people, investment in knowledge, investment in skills, investment in research, investment in venture capital, and investment in entrepreneurship development. This road is also the path to:

- Better, more rewarding jobs and higher incomes;
- Lower taxes and improved services, possible only with a strong and growing tax base;
- A vibrant economy that offers opportunity to Ohio’s young people and attracts others to come here and stay;
- The rising tide of prosperity that does, or certainly can, raise all the boats—benefiting all citizens;
- A positive, winning attitude.
- In short: a better and better quality of life.

This is the road Ohio followed in 1903, when it emerged as an economic powerhouse. It is the road it needs to follow now. Fortunately, some impressive activities already are under way. At Ohio State, for example, the biomedical research initiative, and the Biomedical Research Tower that will accompany it, offer tremendous potential. So does the Mathematical Biosciences Institute funded with $10 million from the National Science Foundation. Yet another very encouraging sign is that the total of extramural research awards won by Ohio State has almost doubled over the past five years. And SciTech—Ohio State’s research park—becomes more successful and effective with each passing year.

The recent announcement that the first Wright Center will be housed at Ohio State and that new funding is being provided to create the world’s
most sophisticated medical scanner, though modest investments in relation to the need, are steps in the right direction. In the same vein, promising work and similar investments are under way at the University of Cincinnati, Case Western University, and elsewhere.

But what is now being done could prove to be too little, too late. These are incremental investments, and incrementalism will not correct years of neglect. Ohio is on a trajectory of economic decline. Incrementalism may slow the rate of decline, but it will not reposition Ohio on a new trajectory to economic prosperity.

Instead, Ohio needs a bold new plan that enjoys widespread support from state political, business, and academic leaders, with the public and private commitment to the kind of investments that can produce systemic change. Armed with a broadly supported and amply funded plan, Ohio can make great progress over just a decade or two. Evidence of that possibility includes not only what Ohio has done in years past—that can-do spirit, if you will—but also what others have done in similar circumstances. Let me briefly cite two examples.

Austin, Texas was a quiet state capital and college town once known primarily for football and country music. But as oil prices and the Texas economy declined in the early 1980s, Austin determined to reinvent itself. With vision and focus, and a working partnership involving the governor, the Austin Chamber of Commerce, and the University of Texas, motivated civic leaders set out to create a new paradigm for the Austin region. The state created thirty-two endowed professorships in engineering, the sciences, and other areas deemed necessary for economic success in the new economy. The state also invested in teaching positions, fellowships, and equipment to create programs of excellence on an international scale. These investments were the cornerstone of the effort to attract the Microelectronics and Computer Technology Corp., or MCC, the nation’s first high-tech consortium of companies. After winning the MCC competition, Austin recruited 3M and the rest, as they say, is history.36

Organizations sprouted up to foster innovation, provide capital, and encourage and incubate new businesses. It was this entrepreneurial environment that spawned the Texas-based Dell computer company. Austin, of course, became a high-tech center focused on semiconductors and computers. By 1988, Inc magazine had named it the number-one entrepreneurial city in the nation.37 Ten years later, Fortune named Austin the “Number 1 Best City for Business in North America.”38 Compared to Texas as a whole, whose job growth was 33 percent during the 1990s, Austin grew by 72 percent.39

Another similar example is Georgia, where a “wake-up” call in the mid-eighties led to the creation of very successful partnerships among Georgia
universities, the state government, and the private sector. Actually, Atlanta had lost the competition for MCC that Austin won, and it set out to ensure that such a thing would never happen again. First, a Governor’s Research Consortium invested in the creation of major research centers of excellence at Georgia research universities. Later, the Georgia Research Alliance broadened the effort and, as in Austin, state and private funding provided eminent scholar positions as well as an upgrading of research facilities, the purchase of sophisticated new research equipment, and incentives to promote partnerships between the universities and the private sector. A decade later, Georgia led the nation in high-tech job growth. Georgia also increased its college graduate population by a whopping 62 percent during the 1990s. Incidentally, according to Milken Institute demographer Dr. William Frey, the cities of Charlotte, Raleigh, Atlanta, and Austin all increased their college graduate population by more than 70 percent during that period.

So, yes, it can be done, and with all of Ohio’s many strengths, it can be done here. Some of the elements are in place but only to a limited extent. For it to really happen, with significant results, four steps are essential. They parallel the steps that made the difference in Austin and Georgia.

The first essential step is the development of a much greater sense of urgency among the state’s business and political leaders. It is not clear that Ohio leaders yet recognize how far the state has declined economically and how much is required to turn the ship around. Real progress—systemic change—will not occur without a new mindset, one in which change is seen as a necessity, not an option. This will take leadership, for as Albert Einstein is reputed to have said, “Leaders are the bridges that connect people to the future.”

An Ohio State University study conducted in 1981 began with the observation that, “American industry is very rapidly losing its heavy industrial base.” The study went on to say that, “If America is to live and prosper, it must move with speed and intelligence into higher technology industry and hold leadership in this field. What is true for the nation is emphatically true for Columbus and the State of Ohio.” That was 1981—twenty-two years after the creation of Research Triangle Park in North Carolina. And here we are today, over twenty years after that paper was written. Had that analysis formed the basis for Ohio public policy over the past two decades, the state’s future would be much brighter today.

But what is done is done. What matters is what happens next. There are many ways to create this greater sense of urgency. For example, the governor, working in partnership with the Ohio Business Roundtable and the legislature, might convene an economic summit where business, govern-
ment, and academic leaders come together to better understand the crisis and launch a process to address it.

The second step Ohio needs to take results from the first. It is a broadly supported plan that incorporates a vision very different from today’s Ohio and a roadmap to reach that new destination. That was the key to success in Austin and in Georgia. I can assure you that other states—even some that are more firmly rooted in the knowledge economy—are doing exactly this now. For example, in 2002, Maryland Governor Ehrlich appointed a high-level task force that includes business leaders and venture capitalists, as well as the president of John Hopkins University, me as Chancellor of the University System of Maryland, and other academic leaders. The charge to the Task Force is to identify the issues Maryland must address and the investments it must make if Maryland is to remain a leader in the knowledge economy. This is a state that already has very good predictive indicators. It ranks number one in per capita investments in R&D and in the percentage of its population with bachelor’s and advanced degrees.

A strategy to develop the plan Ohio needs would be a natural consequence of the economic summit I suggested. It would require a task force composed of business, legislative, and academic leaders who would propose the broad initiatives and identify the resources necessary to place Ohio on a new economic trajectory.

The third step is something that I am convinced would be included in a new visionary plan. It is a substantially increased state investment to strengthen higher education overall, increase its capacity to educate a much higher proportion of the state’s population, and promote economic development in partnership with the private sector. The human capital that will play such a vital role in the years ahead involves, as I noted earlier, much more than just people with technical knowledge and skills. It also involves broadly educated citizens who can reason, plan, and innovate to address the myriad of complex issues facing modern society. Comparing Ohio’s investment in higher education, and using either a per-student or per-income basis, I estimate that Ohio would have to commit something on the order of an additional $500 million a year to match the investment of states with top-tier public universities.

“Whoa,” critics will respond, Ohio doesn’t have the money to support higher education at this level. My response is that other states are doing so and the total required is only a fraction of what the state has already committed to improving K–12 education. Would it not be sad if the state’s admirable investment in K–12 education resulted in a windfall for states with stronger public universities, as they siphon off greater numbers of Ohio’s most talented high school graduates? The state’s political and business
leaders must come to grips with the fact that Ohio has kept higher education on the back burner, while other states have found the money to invest in its universities even in these difficult economic times.

The fourth element—and I cannot overstate its importance—is a vital, close-knit, and continuing partnership between and among state government, business, and higher education leaders. This is missing in Ohio, and it is an absolute must. All the players in this three-legged partnership need to be as enthusiastic and committed as they are cooperative and collaborative. The partnership cannot be seen as an obligation; it has to be a vital calling. And it has to include the enthusiastic participation of the state’s top business leaders.

When I arrived in Ohio in 1998, I was surprised to learn that the state’s major business forum, the Ohio Business Roundtable, did not include participation by academic leaders. In some ways, this omission is indicative of the culture that needs changing in Ohio. I can assure you that in most states, the comparable business groups welcome academic leaders as full partners in shaping the state’s future.

Someone said that there is no short cut to the future, but that there is a fast lane. Ohio must abandon its present dead-end journey and put its pedal to the metal. It needs to reclaim its proud legacy of leadership, and it needs to start now. The leaders and the people of Ohio must decide, and decide quickly, what road to take in the years ahead—a decision that, in Frost’s words, truly could make all the difference.

It is perhaps appropriate to end with Wilbur Wright’s advice to the Ohio Society of New York in 1910 on how to succeed in life: “Pick out a good father and mother,” Wright advised, “and begin life in Ohio.” “That really is what this is all about—creating a climate, economy and quality of life that will make such advice as timely in the twenty-first century as it was 1910.

NOTES

1. The author wishes to thank Chris Perry for his valuable assistance in preparing this essay.
4. Ohio Board of Regents calculations based upon data from the U.S. Department of Commerce, Bureau of Economic Analysis.
6. Ibid., 2.
15. Grapevine, publication of Illinois State University, Department of Educational Administration and Foundations.
16. Calculation based upon National Science Foundation/Division of Science Resources Statistics, Survey of R&D Expenditures at doctorate-granting institutions 2001 (Table B-30) and 2000 population data for U.S. Census Bureau.
17. Ohio Board of Regents.
24. Wolfgang Grulke, 10 Lessons from the Future: Tomorrow Is a Matter of Choice,
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37. Elizabeth Smith, “Austin’s Evolution, University Town to High Tech Center,” and “Austin—Making the Texas Economy Stronger,” The Greater Austin Chamber of Commerce, both May 2001


43. Author’s calculation based on data from Carol Berthold, University System of Maryland.