



REVOLUTION FROM THE FACULTY 1965–1970



AS HARRY PURNELL STORKE, WPI'S TENTH PRESIDENT, SURVEYED THE LANDSCAPE IN THE FALL OF 1968, HE WAS MORE THAN A LITTLE TROUBLED BY WHAT HE SAW. HE KNEW GOOD LEADERSHIP, AND HE KNEW GOOD TEACHING. BUT HE NOW FOUND HIMSELF IN A QUANDARY—NOT SURE HOW TO LEAD HIS FACULTY, AND EVEN LESS SURE ABOUT HOW TO MAKE WPI A SUSTAINABLE EDUCATIONAL INSTITUTION.

Major competitive threats loomed on the horizon. Yet the presumed intellectual leaders of the institution, especially its academic department heads, seemed uninterested in tackling these challenges.

And Storke was running out of time. At the June meeting of WPI's Board of Trustees several months earlier, he had submitted his letter of resignation, effective June 1969—now less than a year off. Storke was a problem solver, by training and inclination. He wanted to leave WPI in good shape for his successor. He knew he was coming up short along that critical dimension of leadership.

At that same June board meeting, he had candidly discussed the problems then facing WPI. Despite rising enrollment, the school had been running at a modest operating deficit for years. In earlier times that gap had been closed by generous gifts from individual trustees, but the declining fortunes of Worcester manufacturing had meant a tapering off of that revenue stream. Belatedly,



WPI had long excelled at supplying competent engineers for Worcester manufacturers, like Graton & Knight (above), maker of industrial belts. Harry Storke (opposite) wanted the Institute to grow beyond that parochial vision.



Admissions director Ken Nourse (top, left) was happy to see the Plan contribute to surging enrollments, while the Institute's rising fortunes helped fund campus improvements, such as (left to right from top, middle) renovations of Salisbury Labs and Boynton Hall and the construction of Freeman Plaza.



SURPLUSES AND OTHER UNEXPECTED SUCCESSES

By reviving enrollments, the Plan soon proved itself to be not only an educational success, but also a financial lifesaver. While engineering enrollment nationally continued to stagnate, WPI's undergraduate numbers bounced back up, from 1,550 in 1969 to 2,050 in 1974. Not only did more students enroll, but they were more likely to stay and graduate. Attrition (which for some years had amounted to a quarter of the class between freshman and senior years) dropped steadily.³⁹ Higher enrollments led to corresponding improvements on the financial side—including the first budget surpluses in years, which gave the Plan further momentum.

The college was not only attracting and retaining more students, but also higher achieving students. As the NSF report concluded, WPI was getting students with higher high school grades and greater career ambitions. Students also came from farther away—a key development, given New England's relatively stagnant demographics. The report even wondered if much of the success of the Plan derived not so much from the new pedagogy as from a more able student body.

Applications continued to climb in the mid-1970s, to the point where WPI did something previously unthinkable: it instituted enrollment

caps. Starting in 1979, with applications still rising, the Institute limited total enrollment to 2,400.

Behind this decision were the difficult economics of the decade. Rampant inflation had introduced enormous uncertainty into higher education. A five-year capital campaign concluded in 1976 by reaching its goal of \$18 million, but over that period, inflation had reduced the endowment's constant-dollar value so much that the bottom-line impact of the new funds was much diminished.

The enrollment cap also reflected physical realities. The college's building stock had begun the decade in good shape, thanks to Harry Storke's building spree in the 1960s. Even so, adding more students would require creating new academic space, which would mean stiff interest costs if the college couldn't self-fund the construction. It would also mean hiring more faculty members to maintain the labor-intensive Plan.

Like most colleges, WPI had responded to inflation with steady increases in tuition. Unfortunately, the general inflation rate—and these corresponding tuition increases—rose faster than did the incomes of most WPI families. The Institute once again found itself under heavy pressure to boost financial aid. By limiting enrollment, it could be more selective about its students, and preserve aid for the most academically promising applicants.⁴⁰

A NEW RELATIONSHIP TO STUDENTS

The Plan changed far more than the curriculum at WPI. It also eventually played a large, if indirect, role in revamping campus life.

Before the Plan, professors often had little sense of their students' personal lives. The rigid curriculum and paucity of gathering places meant faculty had relatively little interaction with students through advising or chance encounters. After class, most students simply retreated to fraternities or commuted back home.

With advising now essential to student success—not just in terms of course choices, but also as a way of helping students take responsibility for learning in general—faculty had to get to know students. As they did, they heard—early and often—about the relative dearth of student activities on campus.

This challenge became all the more visible as more and more students came from outside Worcester County. The Institute began to build more residence halls—most notably the Ellsworth/Fuller complex in 1973, which included the first on-campus student apartments. Sanford Riley Hall, the school's first residence hall, was completely renovated after fifty years. The campus also took on a more residential feel. A landscaped plaza named for Howard '40 and

Esther Freeman was constructed in 1977 between Gordon Library, Salisbury Labs, and the Project Center.

The quality of student life took on a greater priority as competition for affluent students (who wouldn't need financial aid) started to intensify. WPI now had to upgrade the undergraduate experience. Campus amenities that had mattered little in early generations (WPI didn't even have a gymnasium for its first half-century) were starting to become a point of competition.⁴¹ Students were shopping for things that WPI didn't have.

Campus life also improved as administrators like Cookie Price (top, right) and faculty members like John van Alstyne (below) got to know students better.





Among the campus upgrades undertaken during the Strauss administration was the renovation and expansion of Higgins Laboratories, home of the Mechanical Engineering Department. The project included an addition with new laboratories (above) and a spacious lab for undergraduate projects (left).

Special Culture

A Campus Center at WPI: Dream or reality?

LETTERS

Campus Center

STEPPING UP: PLANNING AND CAMPAIGNING

of capital campaign



Ed Parrish already knew that he would have to head a fundraising campaign at WPI. What he didn't know was how big that campaign would be.

The process began in 1996, when Parrish appointed a "Strategic Steering Committee" headed by

Professor Steve Weininger. That group studied the priorities and needs of WPI, and was tasked with reporting to the trustees in April 1997. But the need was obvious, so the campaign didn't even wait for that formal charge. At its February 1997 meeting, the board learned that trustee Ron Zarrella had agreed to serve as campaign chair. Zarrella announced to his colleagues that board chairman John Nelson had made a lead gift of \$1 million, which Nelson characterized as a substantial percentage of his net worth. Nelson received a standing ovation from his peers. Zarrella then made a second, electrifying announcement: An anonymous donor had agreed to match Nelson's gift—and every other gift to the campaign from a WPI trustee. An elated board voted to authorize the campaign, with the dollar goal to be determined in light of the strategic plan.¹⁴

The trustees' generosity remained ahead of the planning process for quite a while. It was not until December 1998 that the faculty approved the goals put forward by the strategic planning group, and not until February 1999 that the trustees learned the dollar total: \$150 million, to be raised by June 2003. It was a daunting sum. At

the University of Virginia, Parrish had helped out with that school's periodic fund drives, which tended to be in the million-dollar range. "So \$150 million was *big* for me, and big for WPI," he comments.

Big, but doable—commitments totaling \$68 million were in hand before the end of the campaign's two-year quiet phase. By 2001, the campaign could count \$102 million in commitments, and a year later, the total exceeded \$120 million. By May 2003—a month short of the deadline—the total had reached \$138 million with \$5 million more in the pipeline, so only \$8 million was still "missing." Those funds were secured; the \$150 million goal was exceeded by \$4 million. Parrish's faith in his trustees—and vice versa—was proven justified.

"Remember that we didn't have a huge base of alumni to draw on," Parrish says. "Maybe 13,000 or 14,000, at that point. So \$150 million was a significant stretch, and several board members really made monumental gifts to help make that campaign a success.

"Certainly, that campaign is something that I'm proud we did."¹⁵

The \$150 million *Campaign for WPI* was launched at a gala at Worcester's Mechanical Hall (top) with the proposed campus center (bottom) as its signature goal.



est priority for new construction. At the full board meeting yesterday, it was confirmed that the campus center was the number one priority in the campaign. I think it's fair to say that the students were heard.... We have a campaign. We have a campaign chair. So we're off and running.¹⁶

The process of soliciting the board for campaign commitments intensified. Meanwhile, a new Campus Center Committee—consisting of faculty and staff members, students, and members of the trustees' Physical Facilities Committee, and headed by assistant vice president for student affairs Janet Begin Richardson—began meeting, with the immediate goal of selecting an architect. The committee soon recommended the firm of Shepley Bulfinch Richardson and Abbott to serve as principal architects—a choice confirmed by the board's Executive Committee in September.

Longstanding WPI policy called for 90 percent of the costs of a proposed capital project to be in hand before that project could begin. By October 1997, there was \$4 million in gifts and \$5.7 million in debt financing available to fund the campus center. The board set the groundbreaking for two years later, contingent on the receipt of another \$5.6 million—or 90 percent of the total \$17 million cost.¹⁷

Design (and, of course, fundraising) continued throughout the fall and early winter. In January 1998, the architect's representative described a facility that would be erected between Higgins Labs and Olin Hall, occupying part of what was then known as the Higgins House

lawn. Richardson surprised the audience by announcing that the Campus Center would include 4,000 mailboxes. No, she quickly explained, we're not doubling our undergraduate population; we're expanding mail services to new groups, including graduate students and off-campus undergraduates.¹⁸

Finally, the event that some had doubted would ever arrive *did* arrive: the groundbreaking for the Campus Center, held with appropriate fanfare on October 29, 1999. Richardson predicted that the new facility would serve as "WPI's third tower of community." President Parrish expressed confidence that the building would be "much more than a student union; it will be a campus hub."¹⁹

The Campus Center—a 71,000-square-foot building comprising dining facilities, meeting rooms, a mail room, student organization offices, a bookstore, a game room, and spaces for social events—finally opened in March 2001, exactly 518 days (as the student newspaper, *Tech News*, noted) after the groundbreaking. Several trustees made sizeable financial commitments to the project, and the Kresge Foundation posed an \$850,000 challenge grant; the rest of the money came in the form of smaller donations from alumni, corporations, foundations, faculty, staff, and students. Five days of celebrations and a week of use by the community culminated in a formal ribbon-cutting and dedication ceremony on Friday, March 30.²⁰ "You have given the building the highest praise," Richardson commented. "That is, using it as if it had always been here."²¹



The dream of a campus center became a reality in October 1999 when student leaders (top, left) and the rest of the WPI community gathered for the building's groundbreaking. Janet Richardson (top, right), who chaired the building committee, spoke as President Parrish and board chairman John Nelson looked on. When construction commenced, the building's distinctive octagonal tower (some called it the third tower of community) took shape (above).

RISE OF THE ARTS



With resurgent interest in STEM, WPI's new bachelor of arts programs (in environmental and sustainability studies, as well as in liberal arts and engineering) attracted only a dozen or so majors from each class. Yet the humanities and arts faculty, who contributed courses to both programs, continued to be heavily involved in a variety of other interdisciplinary projects, as well as the ongoing Humanities and Arts Requirement for all undergraduates. Everyone on campus effectively minored in the liberal arts, regardless of their major.¹⁰

Likewise, on a largely voluntary basis, the fine and performing arts attracted a growing number of students each year. Most impressive was the music program, led by teaching professor Douglas Weeks, who oversaw more than a dozen instrumental and choral groups.

The program's growing sophistication showed itself best in the main orchestra's November 10, 2013, performance at Mechanics Hall. In conjunction with the Clafin Hill Symphony from nearby Milford, the students performed the modernist classic *Gruppen*, by Karlheinz Stockhausen. This complex piece required extreme precision and coordination to keep three separate mini-orchestras going simultaneously, and yet the students pulled it off. As Weeks, the lead conductor, pointed out, the arithmetical orderings of *Gruppen* were "a natural fit" with WPI. Music, after all, comes from the same part of the brain as does mathematical and other kinds of spatial-temporal reasoning.

Less predictably, theatre also flourished on campus. Here the driving force was Susan Vick, a playwright and director who arrived in 1981. When a student asked about fulfilling her Humanities Sufficiency by writing an original play, Vick told the student she would have to stage it as well. That sparked interest from other students, and to encourage them she launched an annual week of new plays. Taking

off from its humble beginnings in 1982, New Voices is the country's longest-running collegiate new-plays festival.

As more and more students participated in drama, Vick led the way in expanding the options for performances. After years of constructing more intimate performing spaces on the grand proscenium stage in Alden Memorial, Vick longed for a dedicated theatre facility. In 2005 that wish came true with funding from the Alden Trust for the renovation of a portion of the lower level of Sanford Riley Hall. What had been the Goat's Head Pub—a key venue in the implementation of the WPI Plan in the early 1970s—and then the alcohol-free Gompei's Place in the 1980s and 1990s, had become a mere storage space after the Campus Center opened in 2000. Now it would be the Little Theatre, a flexible and intimate 100-seat setting. Soon it was hosting a half-dozen shows each year, in addition to the five to ten works showcased each spring during New Voices.

For both music and theatre, the paucity of arts majors meant that these activities were fully open to students from every part of campus.¹¹ As Vick noted in 2008, "There's always that person in an area you wouldn't expect who wants to participate. Here it's legitimate. You can do it. Everybody has a place at our table."¹²

ENGINEERING IS COOL AGAIN

The increased horsepower of an expanded admissions office certainly helped boost enrollment. But just as important was a dramatic turnaround in how young people were thinking about engineering.

Back in the 1960s, a variety of trends (environmentalism, the technocratic face of the increasingly unpopular Vietnam War, the anti-bureaucratic mindset of the era) had soured students on engineering, a trend that continued through the 1970s and into the 1980s. Along with rising affluence, these trends combined to make bright young high school students far less interested in what WPI had always promised: the prospect of a secure and lucrative career in engineering or science. Even with the tech boom of the 1990s, applications only rose from 2,500 to 3,100, little more than what might have been expected from rising birthrates two decades earlier. Students who earlier would have been content to get an engineering degree were increasingly interested in a liberal arts or pre-professional degree, followed by graduate training that would lead to a job.

All of that changed in the 2000s. Household wages never recovered from the 2001 recession. Then the Great Recession of 2008 closed in, heightening the economic concerns of middle-class families. Even if the nation's students weren't yet concerned about the financial payoffs of a college degree, increasingly their parents were. Their awareness became all the more acute as the total annual cost of attending colleges such as WPI kept rising steadily, exceeding \$50,000 by 2014. Meanwhile law, medical, and other professional schools no longer guaranteed affluence, and careers in finance were no longer so promising.

Employment prospects in engineering, by contrast, were reviving. And for the "digital

natives" who arrived as those freshmen of the mid-2000s, technology was an immediate and friendly presence in their lives in ways it hadn't been in the past.

Meanwhile, WPI's new Liberal Arts in Engineering major, first proposed in the Strauss administration and launched in 2010, attracted only a handful of students. The problem it was meant to solve no longer existed, but proponents were happy to have it on hand for the next time technological careers lost favor.

Engineering was cool again, while the liberal arts were losing some of their traditional luster. Some academics decried the decline of the humanities, but far greater numbers were calling for a national push to increase education in STEM fields. In 2010 the federal government called for 10,000 additional engineers to graduate from the nation's colleges every year: an increase of 13 percent. The call echoed the "Sputnik scare" in the 1950s, when the Soviets bested the Americans by putting the first satellite into Earth orbit. Now the threat came from countries that were scoring higher on math tests, and calls only intensified into the 2010s, as faster-than-expected gains in artificial intelligence led to bold predictions that success would come mainly to those who learned how to work well with these "brilliant technologies."¹³

In the midst of economic insecurity and the technology renaissance, a new kind of college ranking appeared. It looked not at reputation (in contrast to the much-maligned *U.S. News and World Report* rankings) but at return on investment—average salaries of alumni relative to the total cost of the degree. Like other technological schools, WPI ranked far higher here than on conventional lists. It wasn't long before prospective students and parents entering Bartlett Center saw these rankings on a large poster in the reception area.



Top National Universities That Produce the Best-Paid Graduates

Rank	School	Starting Salary
No. 1	Massachusetts Institute of Technology (MIT)	\$68,600
No. 2	California Institute of Technology (CalTech)	\$68,400
No. 3	Colorado School of Mines	\$66,700
No. 4	Stevens Institute of Technology	\$64,900
No. 5	Worcester Polytechnic Institute (WPI)	\$62,100
No. 6	Stanford University	\$61,300
No. 7	Rensselaer Polytechnic Institute (RPI)	\$61,000
No. 8	Georgia Institute of Technology	\$60,700
No. 9	Polytechnic Institute of New York University (NYU-Poly)	\$60,700
No. 10	Carnegie Mellon University (CMU)	\$60,200
No. 11	Michigan Technological University	\$59,200
No. 12	Loughborough University	\$58,000
No. 13	Columbia University	\$57,600
No. 14	University of Pennsylvania	\$57,200
No. 15	Cornell University	\$57,000
No. 16	Case Western Reserve University	\$56,400
No. 17	Princeton University	\$56,100
No. 18	Duke University	\$55,900
No. 19	Rice University	\$55,700
No. 20	Johns Hopkins University	\$55,600

Opposite, clockwise from bottom: Susan Vick; the score for *Gruppen*; Douglas Weeks leads the WPI orchestra in the *Gruppen* performance at Mechanics Hall; a performance of *Pirates of Penzance* by WPI's VOX musical theatre organization in 2012.

Top, left: Using marshmallows and toothpicks to explore structural engineering are some of the thousands of kids who flock to campus each spring for TouchTomorrow, "a festival of science, technology, and robots" started by WPI in 2012. Top, right: Engineering pride embroidered on a baseball cap.

Above: The excellent return on the investment families make in a WPI education was captured in a poster displayed in the Admissions Office.