

Postsecondary Education in the Knowledge Economy: Innovative Opportunities Available for Learners in a Seamless Manner

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Introduction

In Wisconsin, more than 58% of all high school graduates go on to some form of postsecondary education: 33% are served by the University of Wisconsin System (UW System), 18% are served by the Wisconsin Technical College System (WTCS), and 8% are served by Wisconsin's private colleges. Together, these sectors graduate about 52,800 individuals annually—graduates who will live in and work to form Wisconsin's economic future. In addition, all three partners serve tens of thousands of non-degree seeking students—those who are interested primarily in improving their work skills or personal well-being.

Nearly thirty years ago, the Legislature made a series of deliberate decisions to establish separate university and technical college systems with distinct missions to meet the needs of Wisconsin citizens and employers. The UW System was intended to provide affordable and ready access to higher education at the undergraduate and graduate level. The WTCS, in contrast, was intended to provide opportunities to acquire the occupational skills training necessary for full participation in the workforce and to upgrade and expand the occupational skills of working adults.

Despite these differences in focus, the UW System and the WTCS share a set of core values. Both systems seek to:

- Maximize access and course offerings while minimizing duplication;
- Encourage diversity in the student body by providing all students with a broad array of educational opportunities;
- Provide learner-center, customer-focused educational offerings that meet the educational, social, and economic needs of students, their employers, and their communities.

Over the last decade, the UW System and the WTCS have embarked on an unprecedented effort to facilitate seamless educational opportunities for our students consistent with these values through easier transfer, better academic planning and advising, and creation of articulated (“2+2”) programming. The two systems have also engaged in a number of collaborative efforts aimed at improving both the educational process and the transfer of technology from the university to the workplace. These collaborative efforts have laid the groundwork for meeting the challenges and opportunities posed by the knowledge economy.

Background

The task of collaboration between the UW System and the WTCS is a constantly challenging one. Each system has a different mission and rests on a different financial base. The mission of the WTCS is “to provide a system of technical colleges which enables eligible persons to acquire the occupational skills training necessary for full participation in the work force; which stresses

job training and retraining; which recognizes the rapidly changing educational needs of residents to keep current with the demands of the work place and through its course offerings and programs facilitates educational options for residents; which fosters economic development; which provides education through associate degree programs and other programs below the baccalaureate level; which functions cooperatively with other educational institutions and other governmental bodies; and which provides services to all members of the public.”

The WTCS operates under a system of shared governance. A 13-member State Board and 9-member local district boards oversee the operation of 16 districts with 47 campuses and hundreds of outreach sites. The State Board is responsible for setting statewide policy and approving educational programs and program standards. The district boards are responsible for hiring college administrators, implementing new programs, and administering the operations of the technical colleges. Local property tax levies provide 55% of the WTCS operating budget; about 22% comes from state general purpose revenue (GPR); 16% from tuition; and the remaining 7% from contracts and federal funding for technical and adult education. This structure balances support among multiple sources of funding, provides for both state and local authority of policymaking, and ensures flexibility and responsiveness to statewide and local education and training priorities.

The UW System mission is: “to develop human resources, to discover and disseminate knowledge, to extend knowledge and its application beyond the boundaries of its campuses, and to serve and stimulate society by developing in students heightened intellectual, cultural, and humane sensitivities; scientific, professional, and technological expertise; and a sense of purpose. Inherent in this mission are methods of instruction, research, extended education and public service designed to educate people and improve the human condition. Basic to every purpose of the system is the search for truth.”

A single statewide board of regents responsible for overseeing 13 four-year and 13 two-year campuses governs the UW System. Some campuses have individual advisory boards, but these have no formal governance or independent funding authority. One-third of the UW System budget comes from state GPR, 16% from tuition, and the remaining 51% from gifts, grants, and contracts earned by each institution. This structure balances support among multiple sources, provides a central authority for statewide policymaking, and ensures responsiveness to statewide priorities.

In creating Wisconsin’s two distinct postsecondary education systems, the Legislature mandated governance structures to check “mission creep” and encourage coordination of effort between the UW System and the WTCS. The State Superintendent of Public Education, for instance, serves as an *ex officio* member of both the UW System Board of Regents and the WTCS Board. Each board president also designates a member of his or her board to serve as a member of the other system’s governing board. In addition, in 1972, the heads of the two systems established several joint committees of high-level administrators from the two systems to coordinate various activities of the two systems. One of these committees, the Joint Administrative Committee on Academic Programs (JACAP), reviews new educational programming being offered by either system. To a large extent, these structures have worked. Even a cursory review of the

educational programs offered by the state's two postsecondary systems indicates that they have maintained their distinct missions.

Since the creation of the UW System and the WTCS, however, changes in the workplace and in societal attitudes about the desirability of a four-year college degree and advanced professional training have blurred the formerly sharp distinction between workforce preparation and more traditional academic pursuits that shaped the mission and programming of the state's two postsecondary educational systems. The increased use of technology in the workplace, for example, has caused employers to place added value on the technical skills provided by postsecondary occupational education and training in the state's technical colleges. At the same time, long-term demographic shifts resulting in the growing shortage of skilled labor in Wisconsin and across the county have led employers to look within the ranks of their current workforce to identify employees who, with further education of the sort offered by the state's colleges and universities, can assume higher level positions. The new "Knowledge Economy," in short, both requires workers with higher levels of education and rewards those with higher levels of technical skills than in the past. The challenge to the UW System and the WTCS posed by the "Knowledge Economy" is to coordinate our educational programming and build on the unique strengths of each system to provide students with seamless opportunities to build strong academic foundations and gain technical competencies and knowledge needed in the workplace.

Current Cooperative Efforts

A number of significant collaborations are under way that strengthen both the university and technical colleges and expand our joint ability to produce skilled graduates for Wisconsin:

- Federal Co-Lab project
Earlier this year, the WTCS and the UW System formed a partnership that was named the sole higher education site for federal distance education development in the nation. The Co-Lab project places Wisconsin higher education at the forefront of setting the technical and educational standards for distance education programming for all federal workers, including more than three million armed services personnel.
- Wisconsin Manufacturing Extension Partnership
For the last four years the WTCS and the UW System have joined together with Milwaukee School of Engineering, Marquette University, and the Wisconsin Department of Commerce to provide assistance to the state's small to mid-range manufacturers seeking to modernize their operations. A non-profit corporation funded by the National Institute of Standards and Technology, the WTCS, the UW System, and the State of Wisconsin, WMEP helps small to mid-sized manufacturers compete more effectively in the global marketplace. WMEP draws on staff from its partner organizations to help Wisconsin companies better meet delivery schedules, improve product and process quality, increase employee productivity, realize a greater return from material and energy investments and better understand cost controls. Through its ties to the state's engineering and business community, WMEP matches the technical needs of client firms with expertise in the academic community. Through its ties to the state's technical colleges and university extension program, WMEP identifies and matches workforce training needs with the state's training resources.

- Opportunities for Joint Programming

The UW System and the WTCS are actively pursuing opportunities for joint programming. An example is the joint associate degree program in Computer Information Systems between Southwest Wisconsin Technical College and UW-Richland. In this joint program, SWTC offers computer information classes at the UW-Richland campus and UW faculty offer customized general education and support courses for SWTC students enrolled in the program. We anticipate that such joint programming between UW System's two-year Colleges and individual technical colleges will expand rapidly as market opportunities arise.

- Improving Transfer Opportunities

Since 1989, faculty and administrators from the two systems have been working together to develop program articulation agreements that permit students to begin their educational career in a technical college occupational program and to seek more advanced training in a related UW baccalaureate program. JACAP has overseen the implementation of more than 360 of these articulation agreements for programs that coordinate degree completion requirements between the two systems. Prior to the initiation of these articulation agreements, fewer than 1,300 students transferred from the WTCS to the UW System annually. Last year, these agreements facilitated the transfer of 2,619 students from the WTCS to the UW System; an additional 2,735 students transferred from the UW System to the WTCS.

As educational requirements in the workplace have changed and career advancement has become more dependent on college completion, the need to review the current transfer policies and practices between the WTCS and the UW System became evident. In April 2000, the Board of Regents and the WTCS Board met in an historic joint session to agree on a new set of guidelines and recommendations for further strengthening collaboration statewide. The *Statement of Principles* adopted by the two governing boards outlines a number of goals for better serving students. These goals include:

- ◆ Accelerating the achievement of students' educational goals while maintaining the integrity of the UW System institutions and their specialized program accreditation.
- ◆ Offering maximum appropriate recognition for work completed at a WTCS institution that is related to the student's educational goals and the UW degree requirements.
- ◆ Offering flexibility for students by providing multiple ways of gaining the credentials they need for their personal and career development.
- ◆ Leveraging prior course work to reduce duplication and cost.

The statement further commits the two systems to work together to advise students regarding the purposes, programs, and opportunities available through the two systems. Additionally, it commits the two systems to work cooperatively to improve the

monitoring of WTCS students who transfer to UW institutions in order to evaluate the new initiatives and other cooperative efforts.

As part of the process of improving opportunities for WTCS students to transfer to the UW System, the UW System Board of Regents also adopted specific initiatives including:

- ◆ Creation of “2+2” baccalaureate degree completion programs and utilization of existing degree completion and extended degree programs that enable WTCS students graduating with an associate degree of applied science to transfer as third year students into a companion bachelor of science or applied science degree program in a related field of study or a broad-based bachelor of applied arts or sciences degree.
- ◆ Development of “2+2” and other multi-institutional articulation agreements between WTCS and UW institutions in appropriate program areas where course content alignment and consistency are determined to exist.
- ◆ Increased transferability of WTCS general education credits in mathematics and natural science.

The leadership of the two systems believes that these initiatives hold great promise to increase both the volume and the seamlessness of transfer from the WTCS to the UW System.

Nationally, baccalaureate degree completion programs and strong “2+2” articulation agreements such as those envisioned by the leaders of the WTCS and the UW System have been developed in a variety of academic fields as diverse as nursing, criminal justice, engineering, and industrial management, and business administration in response to dramatic increases in workplace technology and the need to support the implementation of this technology with a more skilled and highly educated workforce. In Wisconsin, a newly approved program at UW-Stout enables WTCS graduates of associate degree technical programs to earn a baccalaureate degree in industrial management. This innovative, model program is made available statewide through a combination of evening and weekend classes using a variety of distance education methods. It provides place-bound professionals opportunities to build on previously completed technical education to prepare for management and leadership challenges. The UW and the WTCS are actively engaged in developing a number of similar programs in nursing, early childhood education, criminal justice, printing management, business administration, and other fields.

By recognizing the high level of technical skill and learning that technical college graduates have already attained, these new completion programs will reduce the cost to students and to employers who provide tuition reimbursement benefits to employees seeking further education. These new completion options will help to eliminate the repetition of course work at a UW System institution that transfer students had already completed at a WTCS institution. Moreover, the greater availability of baccalaureate completion programs in a broader range of occupational fields should encourage more

high school students and their parents to think about beginning their postsecondary education in a technical field by enrolling in options available through the WTCS. With a solid occupational skill in hand, students could then immediately complete a baccalaureate program in the UW System, or more likely, work full or part-time and complete their studies at UW institution at their own pace.

Challenges and Opportunities Ahead

A major obstacle to continued economic growth in Wisconsin is the state's shortage of skilled labor. For much of the last thirty years, the U.S. economy has created jobs at a rapid pace to absorb large numbers of new workers entering the labor market each year. In Wisconsin, our highly skilled workforce has been the backbone of our state's economy. The outlook for the future is starkly different. Current estimates indicate that far fewer new workers will enter the state's labor force in the next ten years than will be needed. Already, critical shortages of skilled workers to fill new jobs and replace retiring workers threatened to derail Wisconsin's continued economic growth.

Continuing collaboration is essential to ensure that both the UW System and the WTCS maximize their potential contributions to Wisconsin's skilled workforce and economic future. The benefits of such collaboration cannot be measured in transfers alone; indeed the most important long-term benefits of collaboration lie in more nimbleness in responding to changing economic needs, expanded consumer choice for students, and the greater convenience and ability to reach working adults who need advanced or more technical skills to meet changing career responsibilities. The increased use of instructional technologies that make learning opportunities available anytime, anywhere, and tailored to the learning style of the student holds much promise.

These are tasks that call for more professional collaboration, not legislative mandate. These collaborations must be driven by the rapidly changing market conditions and provide some margin for risk-taking and even the occasional program failure. The educational systems accept responsibility for seeking the broadest input for identifying the educational needs of Wisconsin citizens. But crafting the response to those needs must rest with the faculty and staff who have the responsibility for designing the programs and the clear accountability to produce positive results.

- Instructional Technology: The TEACH Collaborative
The TEACH Collaborative consists of the principal heads of TEACH, WTCS, UW System, the Wisconsin Association of Independent Colleges and Universities (WAICU), and the Department of Instruction (DPI). These leaders meet regularly to coordinate state investments in instructional technology. The focus of this group has been on coordinating on-line tools and training for teachers across the state. A teaching materials database for K-12 teachers called IDEAS will be on-line in the 2000-01 academic year, providing a clearinghouse and access point to teaching materials generated in all of Wisconsin's educational sectors. The TEACH Collaborative also monitors technology and distance education costs to work towards achieving the most efficient pattern of expenditures possible across the entire range of educational sectors.

- PK-16 Council

A number of states have moved from top-down approaches to governance to voluntary collaboration across the major educational sectors. PK-16 Leadership Councils are in place in California, Georgia, Illinois, Kentucky, Maryland, Missouri, Nebraska, North Carolina, Ohio, Texas, and Iowa. These councils succeed by defining and focusing on a few common agenda items and by bringing existing staff resources in each sector to bear on specific action steps. These councils identify changing needs and focus existing resources without getting tangled in extraneous political debates. They focus exclusively on obtaining educational outcomes. As noted above, Wisconsin already has a mini-version of this approach in place that could be expanded or replicated more broadly.

- Supporting Lifelong Learning

Over the last several decades, education has become for an increasing number of adults, a lifelong endeavor. In an increasingly complex and rapidly changing world, graduation from high school, technical college, or university cannot be considered an endpoint of the educational process. To be sure, much learning of a person's lifetime occurs outside the formal framework we think of as the education setting. But our formal educational structures need to become more flexible as working adults seek to access the world-class education that the UW System and the WTCS offer. New instructional technologies offer much promise in increasing flexibility. As institutions adopt these new technologies they must also change their attitude about the seriousness of purpose of non-traditional students and the multiple commitments that they have in their lives. Both the UW system and the WTCS operate most of their degree programs on a semester basis rooted in an academic calendar agricultural era that is long past. This approach to the provision of education makes few allowances for the needs of working adults who cannot abandon their job and career to attend a postsecondary institution full-time. A major challenge facing both the UW System and the WTCS is the need to examine closely the models for further education that are arising in the private sector and look to ways of increasing degree and program offerings that better meet the needs of working adults.

- Career and Educational Laddering

Wisconsin enjoys one of the highest labor force participation rates in the U.S. Nearly all those who can work are already at work. This high level of labor force participation serves to exacerbate the state's skilled labor shortage. One way of alleviating the problem is to increase the skills of those already at work. While this would create even greater pressure on employers of lower-skilled jobs, it would lead to increased labor efficiency at the lower end of the wage scale and greater in-migration to the state of the lower-skilled workers. A promising approach to increasing workforce skills is to develop career and educational ladders for lower-skilled workers to gain both the skills and credentials they need to advance in the workplace. The WTCS has already begun this process by modularizing curriculum and instructional delivery of occupational programs in health care. A similar approach is underway in machine tooling. By making it possible to begin the educational process in the workplace itself, and by modifying the curriculum at successive levels to build upon previously gained skills and knowledge, persistent working adults will be able to move from low-skilled jobs though more

demanding, higher-skilled employment and from short-term occupational programs through an associate degree. Together, the WTCS and the UW System are working to make it possible for nursing students to complete this sequence and obtain a baccalaureate degree in nursing.

- Productivity Enhancement

A particular challenge and opportunity for postsecondary education lies with the increasing need to help improve the productivity of the state's incumbent workforce. While much of the public discussion on the skilled worker needs of the state has focused on expanding the workforce, much of the real growth in the economy has been the result of the improved skills of the current workforce and the application of new technology to the current foundational industries of the state. Whether Wisconsin is ever going to enlist the thousands of new skilled workers the state is projected to need is problematic. However, it is clear that the continual upgrading of the incumbent workforce must become a major goal for the state and a special challenge to postsecondary education. The UW System and the WTCS will need to redouble efforts to respond to employer needs. In this domain as well, the UW will need to focus on its baccalaureate and post baccalaureate level of instruction, while the WTCS will concentrate on its statutory mission of “customized training and technical assistance to business and industry in order to foster economic development and the expansion of employment opportunities at below the baccalaureate level.”

Opportunities to partner between UW and the WTCS are expected to increase as assessment of the training and technical assistance needs of employers become more pronounced. Assessments reveal assistance needs across the spectrum of the manufacturer workforce. A model effort presently exists in a private/public partnership involving manufacturers, universities, technical colleges, and labor—the Wisconsin Manufacturing Extension Partnership (as noted above). Here, as training and technical assistance needs are identified through assessment of manufacturing needs, the universities provide assistance on engineering, research and development, and management issues, while the Technical Colleges deliver the technical worker training and related manufacturing floor process improvements.

- Transitioning from Secondary to Postsecondary Education

With regard to the critical transition point when high school students and their parents choose their initial entry point to postsecondary education, the two public postsecondary systems have a major opportunity to partner. A comprehensive approach to providing consistent educational and career information should be developed by UW System and WTCS staff to present students and their parents with the full range of choices for their future. Families are currently bombarded with a confusing array of postsecondary education literature. They need clearer options and career pathways from which to choose. With appropriate financial and policy support, the public postsecondary education systems could develop accurate and thoughtful presentations and materials that would be available to students and their parents electronically, in print, or in person. The systems have a positive start to build on with the current electronic student information systems and the targeted Transfer Information System. With the future expansion of

baccalaureate completion programs (Associate Degree from the WTCS plus junior and senior years in the UW System), all educational pathways leading to a successful completion of postsecondary education and placement at a good job in Wisconsin should be made evident to students.

- Increasing Skills for the Whole Workforce

As the state moves forward to encourage capitalization and development of biotechnology and other high tech firms, developing the intellectual capital of engineering schools, medical centers, cell research laboratories, electronics industry, agri-based industries, and the like, it will be critical for the state to include in the planning the professional and technical skilled worker components of that growth. Postsecondary institutions need to be included in those economic development discussions. Moreover, the development of new industries requires Wisconsin to grow a bigger pool of skilled workers, not simply to redistribute the existing workforce.

- Bringing Underrepresented Populations into the Labor Force

While Wisconsin seeks to expand its pool of skilled workers, it will be necessary to vigorously involve those populations now underrepresented in the skilled workforce—including minorities, the disabled, ex-offenders and new immigrants. As community leaders throughout all parts of the state, the individual UW institutions and technical colleges can take lead roles in establishing welcoming community climates for these target populations by actively promoting positive events and marketing success stories. Of corresponding importance will be the need to inform and provide postsecondary educational access to these target populations. Facilitating activities are likely to include community counseling sites with counseling materials in foreign languages, English as a second language programs, work with community transition agencies, and procedures and practices that credential the previous life and educational experiences of non-traditional students. The UW System and the Technical College System have extensive experience with these types of activities, and should partner for the added benefits from the synergy.

- K-12 Teacher Preparation and Certification

One of the underpinnings of a healthy economy is a top quality elementary and secondary education system. In order to maintain and improve the excellent foundation we have in Wisconsin, a continuous supply of quality teachers is needed to add to the workforce and current teachers kept abreast of the workplace. Schools of Education within the UW System are responding by introducing training modules into their curriculum that recognize the astonishing impact of technology on the classroom as well as our personal lives. However, more needs to be done with training teachers to be familiar with technology, especially educating them to develop the capacity to access the stores of educational information that is and will be available. Moreover, teachers need a better sense of what is required of students to succeed in the economic workplace. Thus, familiarity with the WTCS and its curriculum is essential. Encouraging steps have already taken place in that technical college courses may already be used to meet teacher re-certification requirements. A more interactive relationship between Schools of

Education, K-12 teachers and would be teachers, and the WTCS will be called for in the new Wisconsin economy.

Financial support of public education in Wisconsin has been substantial, and yet there are limits to the state's resources to support quality education. The state's universities and technical colleges constantly search for more efficient and effective means to deliver the desired services. Earlier and throughout this paper we have pointed to exemplary programs and activities undertaken jointly by the UW System and the WTCS. We are fully cognizant Wisconsin cannot move into the "new economy" unless we redouble our cooperative efforts. We understand that we serve best by establishing smooth transfer of credit opportunities for our students, and by partnering on federal grants, student assessments, curriculum laddering, libraries, assistance to business and industry. Collaborative programs also require sharing of faculty and facilities.

Katharine Lyall is the fifth president of the University of Wisconsin System and its first woman president. The UW System has 26 campuses and serves 150,000 students. Prior to her appointment as president in 1992, she served as Vice President for Academic Affairs and as Executive Vice president of the UW System, and earlier as director of the Graduate Program in Public Policy at Johns Hopkins University. She has held faculty appointments at Syracuse University, Cornell, and Johns Hopkins, and currently is Professor of Economics at UW-Madison where she finds time to teach freshman micro-theory. During the Carter Administration, Dr. Lyall served as Deputy Assistant Secretary for Policy Development and Research at the U.S. Department of Housing and Urban Development (HUD). Currently, she chairs the board of The Carnegie Foundation for the Advancement of Teaching, the nation's oldest organization supporting teachers and excellence in teaching. You may be more interested to know that Katharine is an avid sailor and watcher of Saturday morning cartoons, which she says are an allegory for life. She has not indicated whether she regards college presidents as the Roadrunner or the Coyote!