

## Center for the Study of Jobs & Education in Wisconsin

### The Ultimate Hype: Universities, High Tech Jobs and the New Economy

**By Dennis W. Redovich October 2000 Revised March 2001**

The myths of the high tech, high skill and high pay jobs of the future have survived and flourished since the 1960's. The New Economy is the new fiction of the economists and the casino royal players on Wall Street. In the 21<sup>st</sup> Century the savior of our New Economy and the creator of the high tech and high pay jobs of the future, the universities, has emerged to save the United States from any economic calamities. Just throw the millions at the universities and the academic elite will solve all our social and economic problems. Nothing could be further from reality.

Like high-tech stocks on the Nasdaq in 2001 the great numbers of high-tech graduates produced by the universities is a bust. Most workers do not learn how to do their jobs at a university, including so-called high tech jobs. The number of workers trained for specific jobs of any kind by universities is relatively small as compared to the total number of workers. (For example 3 million in Wisconsin) Wisconsin DWD projections of jobs requirements indicate that only 10 to 15% of jobs "might" require a bachelor's degree or more.

In FY2000 it cost the State of Wisconsin about \$140 million (about 14% of total WTCS revenues of about \$971 Million) to provide education and training statewide for more than 400,000 students annually in the Wisconsin Technical College System. At least 50% of WTCS students are 25 or over (In 1999 48% of graduates were 25 or over). The Technical Colleges provide excellent individual courses and programs for more than 200,000 so-called adult learners annually at a cost far below the UW-System.

It costs the State of Wisconsin a GPR of about \$1 Billion (about 33% of UW-System revenues of about \$3 Billion) for about 129,000 full time students (headcount is not available). The UW-System in FY01 had 28,885 positions (not including hospitals and clinics) and was requesting 493 additional positions for FY 02. The WTCS has about 9,700 FTE employees and about 60,000 FTE enrollments.

Nursing Assistant graduates (2,577) in 1999 represent 17% of all graduates from the 15,365 Wisconsin Technical College System graduates in 1999. This total is 2.7 times the 950 Technical Division graduates from 44 programs statewide. Nursing Assistant graduates have been about double Technical graduates for 10 years. Technical Division graduates have declined from 1,209 in 1990 to 950 in 1999 (-21%)

**The sum of year 2000 UW-Madison (878) and year 1999 UW-Milwaukee (171) graduates in Biological and Physical Science, Mathematics and Computer Science**

**plus the 950 WTC System statewide total graduates from 44 Technical Division programs is 1,999. This is 578 (22%) less than the 2,577 1999 statewide total graduates for nursing assistants from Wisconsin Technical Colleges.**

Computer operations graduates from three Technical College programs offered in the WTCS Business Division, CIS Program Analyst 407, CIS Computer Specialist 311 and CIS Network Specialist 137 totaled 855 graduates in 2000. The premier Computer Science program at UW-Madison in the year 2000 graduated 198, Bachelor's 116, Master's 66 and PhD 16. Sixty-Five (33%) of these graduates were international students, largely from Asian countries like Taiwan and Japan.

The University of Wisconsin System has been claiming the need to provide greatly expanded offerings to the adult population since the 1960's. In the past they called adults over 24 the "new market" or the non-traditional university market. In 2000 they simply call them "adult learners" participating in the buzz slogan, life long learning activities. And of course the need for life long learning is based on computer and new technical skills. It is a lot of baloney. Elementary school children can learn new computer skills in short courses. There is no great need for high priced professors to be teaching adults computer skills. It is hype created by the universities \$1,376,054 29 member public relations team. (Journal Sentinel 9/3/2000)

The hype about higher education is proliferated by many and perpetuated by the media. This includes the so-called guru of economics and the new economy Allan Greenspan. "The heyday when a high school or college education would serve a graduate for a lifetime is gone. Workers must be equipped not simply with technical know-how but also with the ability to create, analyze and transform information and to interact effectively with others. Moreover learning will be a lifelong activity." Greenspan continues, "Certainly if we are to remain preeminent in transforming knowledge into economic value, the U.S. system of higher education must remain the world's leader in generating scientific and technological breakthroughs and to meet the evolving demands for skilled labor." (Remarks by Allan Greenspan, Structural Change in the new economy, July 11, 2000)

### **What is the Reality of the High Tech Jobs of the Future?**

As part of a study of University of Wisconsin System graduates and jobs, I have analyzed the number of jobs in Wisconsin for about 700 job titles in 1996 and projections for these jobs in 2006. The data was taken from the, **Wisconsin Projections 1996-2006, Wisconsin Department of Workforce Development, July 1998.** The tables and analysis that follow were all done by the Center for the Study of Jobs and Education in Wisconsin. (A detailed analysis of jobs in any state can be done by the Center. Contact Dennis Redovich for information.)

Summary of Findings (See Tables I to V for data)

The jobs of the future are essentially the same jobs in existence in 1996. The great

majority of jobs in 2006 require short term on the job training or experience or moderate length on the job training, experience or education. Tables I and II show the following:  
 \* The top six jobs in employment in Wisconsin are all short-term training or experience and they represent a projected 391,180 jobs or 12.2% of total 2006 employment in Wisconsin. \*Short-term jobs represent 30 of the 57 job titles (Of a total of about 700 job titles) with at least 10,000 jobs projected in 2006. These 30 job titles are projected to employ 907,208 or 28.5% of total employment in 2006. \*Jobs that require College Graduation represent 8 of the top 57 jobs projected for 2006 and are projected to employ 174,680 or 5.5% of total employment in 2006. \*Short-term jobs in total will increase in number and percent more than jobs that require college graduation.

Table I -Employment in Wisconsin 1996 and Projected 2006 Employment in 57 Job Titles\* with Projected Employment of 10,000 or more in 2006

Wisconsin 1996-2006	1996	Training/Experience	2006
Rank Order by Job Title 2006	Employment	Education	Employment
1.Salesperson Retail	73,550	Short Term	82,230
2. Cashiers	68,290	Short Term	79,050
3. General Office Clerks	62,750	Short Term	66,700
4. Janitors & Cleaners	49,810	Short Term	58,190
5. Truck Driver Heavy	48,380	Short Term	54,700
6. Waiters/Waitresses	44,360	Short Term	50,310
7. Secretary Not Medical/Legal	51,870	Moderate	49,450
8. Registered Nurses	40,450	Associate Degree	46,540
9. Market/Sales Supervision	37,610	Experience Related	41,980
10.Nurse Aides/Orderlies	36,720	Short Term	41,960
11. Bookkeeping Clerks	42,570	Moderate	41,040
12. Teachers Elementary.	36,070	Bachelor's Degree	40,840
13. Teachers Secondary.	30,940	Bachelor's Degree	36,630
14. Food Prep Workers	30,778	Short Term	35,890
15. Maintenance /Repair General	29,350	Short Term	34,420
16.Hand Packers	26,040	Short Term	31,880
17.Truck Driver Light	22,370	Short Term	26,220
18.Traffic/Ship/Rec Clerk	23,220	Short Term	25,860
19.Carpenters	23,870	Moderate	25,850
20.Stock Clerk/Sales Floor	23,780	Short Term	25,740
21.Receptionist/Information Clerk	20,940	Short Term	25,230
22.Child Care Workers	18,960	Short Term	24,750
23.Maids/Cleaners	20,670	Short Term	24,680
24.Clerical Supervision.	20,880	Experience Related	24,580
25.Bartenders	21,570	Short Term	22,450
26.Accountant/Auditor	19,230	Bachelor's Degree	21,930
27.Cooks Restaurant	16,860	Short Term	20,310
28.Pack/Filling Machine Operator	14,650	Short Term	19,600
29.Financial Managers	16,280	Bachelor's Degree	19,080
30.Auto Mechanics	16,230	Moderate	18,750
31.Home Health Care Aids	11,880	Short Term	18,540
32.First Line Supervision Production	11,470	Experience Related	18,260
33.Ind. Truck/Tractor Operator	16,140	Short Term	17,710

34.Cook Fast Food	13,860	Short Term	17,420
35.Hairdressor/Stylist	15,820	Moderate	17,280
36.Food Service/Lodging Manager	13,500	Experience Related	17,210
37.Comb. Food Prep/Service	13,860	Short Term	15,550
38.Machine Setup/Operator	16,930	Short Term	15,560
39.Systems Analyst	8,020	Bachelor's/Experience	15,420
40.Bank Tellers	13,980	Short Term	15,050
41.Special Education Teacher	9,190	Bachelor's	14,170
42.Licensed Practical Nurse	12,490	Moderate	14,030
43.Marketing PR Manager	10,980	Bachelor's/Experience	13,680
44.Electrician	12,340	Moderate	13,630
45.Machinist	12,370	Moderate	12,930
46.Order Clerks	12,000	Short Term	12,570
47.Sales Representative Science	11,100	Experience Related	12,520
48.Teachers-Pre/4-5 Kindergarten	10,860	Bachelor's Degree	12,440
49.Teacher Aides	9,490	Moderate	12,240
50.Welders/Cutters	10,490	Moderate	11,810
51.Adjustment Clerks	8,280	Short Term	11,760
52.Typists (Word Processing)	14,370	Short Term	11,460
53.Driver Sales Workers	9,830	Experience Related	11,370
54.Bus Drivers School	8,240	Short Term	11,070
55.Physicians	9,810	Professional Degree	10,720
56.Lawyers	8,760	Professional Degree	10,690
57.Data Entry	9,130	Short Term	10,420
Totals 1996 and Projected 2006			
For 57 Job Titles	1,304,238		1,492,350
Percentage of Employment	47%		47%
Total All Job Titles (700) 1996 and	2,797,400		3,185,500
Projected 2006			

\*Does not include General Managers & Top Executives category or NEC groupings.

Table II Employment 1996 and Projected 2006 by Training/Experience Education

Training/Experience Education	Number	% of 57 Job Titles	Employment 1996 (% of Total)	Employment 2006(% of Total)
Short Term	30	53%	784,418 (60%)	907,208 (61%)
Moderate	10	17.5%	207,504 (16%)	217,010 (14.5%)
Bachelor's	8	14%	153,260 (12%)	174,680 (12%)
Experience Related	6	10.5%	104,396 (8%)	125,920 (8%)
Professional Degree	2	3%	18,570 (1%)	21,410 (1%)
Associate Degree	1	2%	40,450 (3%)	46,540 (3%)
Totals	57	100%	1,304,238	1,492,350
Percentage of Employment			47%	47%
Total All Job Titles (700) 1996 and			2,797,400	3,185,500
Projected 2006				

Tables III shows the following:

\*The number of jobs in 14 specific computer job titles projected for 2006 in Wisconsin 34,090, represents about 1% of total employment \*It is projected that from 1996 to 2006 there will be 1,172 new jobs annually in these 14 job titles. (Not including deaths and

retirements) \*A college degree is not required for all of these jobs. \*Short term or moderate length training and/or experience are often used for entry-level positions.

**Table III Computer Systems and Computer Math/Science Research**

Computer & Math Job Titles	1996	2006	Growth/Yr.
In Wisconsin-14 Job Titles	Employment	Projection	1996-2006
<b>Computer Systems</b>			
1. Systems Analysts	8,020	15,420	741
2. Computer Programmers	7,390	8,700	132
3. Computer Support Specialists	2,410	3,950	154
4. Computer Program Aides	1,420	1,390	-3
5. Database Administrators	690	1,160	47
6. Computer Scientists NEC	640	1,340	69
7. Programmers Numerical Tool	300	310	1
	20,870	32,270	1,141
<b>Computer/Math Science-Research</b>			
1. Financial Analysis Statistical	560	770	21
2. Statisticians	390	470	9
3. Operations Research Analysts	260	260	0
4. Actuaries	180	180	0
5. Math Scientists	40	50	1
6. Mathematical Scientists	40	60	2
7. Mathematical Technicians	20	30	1
	1,490	1,820	31
<b>Total 14 Computer Math Job Titles</b>	<b>22,360</b>	<b>34,090</b>	<b>1,172</b>
<b>Percentage of WI Employment</b>	<b>0.80%</b>	<b>1.07%</b>	

**Table IV Occupational Areas That May Require Higher Math or Science**

Occupational Areas	WI 1996	WI 2006	Number of
	Employment	Employment	Job Titles
Engineers	23,950	31,550	18
Engineering Technicians	21,310	22,690	11
Physical Scientists	2,740	3,450	6
Life Scientists	3,230	3,860	5
Physical & Life Science Techs	5,780	6,530	5
Computer Systems	20,860	32,270	7
Math/Science Research	1,500	1,180	6
Math/Science Instruction	6,800	7,680	9*
	85,170**	109,840**	67

Percent of Total Employment 3.0%\* \* 3.5%\*\*

\*Includes Life & Physical Science, Math, Computer & Health Specialty Teachers

As shown in table IV, 67 job titles related to math and science are projected to employ 109,840 in Wisconsin in 2006. Two occupational titles, Salespersons Retail (82,230) and

Cashiers (79,050) are projected to employ 161,280 in Wisconsin in 2006. Of course, retail clerks and cashiers should be required to take algebra and physics since they operate high-tech scanners and cash registers.

Nationwide there were 153,000 jobs in the so-called Biotechnology Industry according to an "Annual Biotechnology Industry Reports", 1993-1999 cited in the Journal/Sentinel article July 5, 2000. It is not clear as to how many of these jobs are scientific or technical and how many are business services or other non-scientific or non-technical jobs. In any case the number of potential jobs created in Wisconsin in the Biotechnology Industry is not large as compared to other industries. It is also not clear how many of the jobs created would be above average in salary.

The following data was taken from the, **Wisconsin Projections 1996-2006, Wisconsin Department of Workforce Development, July 1998**. There is no specific classification for biotechnology jobs. The job titles selected are from the more than 700 specific jobs titles listed.

**Table V Job Titles That "May" be Biotechnology Related**

Biotechnology Job Titles	1996	2006	Growth/Yr.
	Employment	Employment	1996-2006
<b>Physical &amp; Life Scientists</b>			
1. Chemistry	1,520	1,800	29
2. Biological Scientists	970	1,290	33
3. Life Scientists NEC	350	370	4
4. Agricultural Food Scientists	660	730	7
5. Medical Scientists	110	130	3
<b>Totals</b>	<b>3,610</b>	<b>4,320</b>	<b>76</b>
<b>Physical/Life Science Technicians</b>			
1. Biological, Agricultural/Food Techs	2,140	2,430	30
2. Science Technicians NEC	2,030	2,310	28
3. Chemical Technicians exc. Health	1,620	1,790	17
<b>Totals</b>	<b>5,790</b>	<b>6,530</b>	<b>75</b>
<b>Total Biotechnology Job Titles</b>	<b>9,400</b>	<b>10,580</b>	<b>151</b>
<b>Percentage of Total Employment</b>	<b>0.03%</b>	<b>0.03%</b>	

I have been analyzing job data and planning vocational educational curriculum and facilities since the 1960's. I have planned more than \$100 million in new and remodeled facilities including three new campuses (North, South and West) at the Milwaukee Area Technical College from 1969 to 1991 when I retired as Director of Research, Planning and Development. (The Milwaukee Campus of MATC has more than 1 million sq. ft.) MATC had semester student headcounts of more than 40,000 with part time evening duplicated headcounts of more than 30,000 each semester from the 1960's to 1991 when I retired. The great majority of these students were adults over 21 who were employed. (Many were college graduates looking for skills to improve their skills to get a new job or to advance in their present job) MATC provided evening courses at more than 20 evening centers throughout Milwaukee and Ozaukee counties, mostly high schools,

during these years. I state the above only to show that the great majority of adults in Wisconsin who are interested in upgrading job skills are served well by the Wisconsin Technical College System statewide. Less than 20% of jobs require a university degree or certification.

Dennis W. Redovich

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Dennis W. Redovich retired as Director of Research, Planning and Development from the Milwaukee Area Technical College in 1991 after 28 years of service. He has taught chemistry and math at three Wisconsin high schools (Clinton, Wilmot Whitefish Bay) and chemistry at MATC, UW-Milwaukee and Marquette University. Presently Dr. Redovich is an educational consultant, public speaker and Center Director of the Center for the Study of Jobs & Education in Wisconsin. Dennis W. Redovich has presented at six international educational conferences since 1987, (Holland, Germany, Brussels, Israel, Finland and China) national education conferences and at conferences in the State of Wisconsin for 40 years.



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March 13, 2001

Senator Brian Burke  
Senate Chairperson  
Joint Committee on Finance  
Wisconsin Senate  
State Capitol

Representative John Gard  
Assembly Chairperson  
Joint Committee on Finance  
Wisconsin Assembly  
State Capitol

**Re: Non-Fiscal Policy Items in Budget Bill Affecting Wisconsin Technical Colleges**

Dear Senator Burke and Representative Gard,

On behalf of the Wisconsin Technical College District Boards, I'm writing to request your consideration for removal of several non-fiscal policy items affecting the Wisconsin Technical College System (WTCS) from the state budget bill, SB 55 and AB 144. These items were not requested by the WTCS (State) Board, our district boards, college presidents, student governments, or our faculty or staff associations.

**Incentive Grants - State Approval of Local Budgets -- SB 55/AB 144 would require the WTCS (State) Board to approve each college district's annual budget as a condition of awarding incentive grants.**

The WTCS Board distributes "incentive grants" to all sixteen of the college districts for statutorily authorized purposes such as adult literacy programs, and development of programming to meet new or emerging workforce needs, etc. Current funding is \$7.88 million annually with no increase proposed for 2001-2003. The budget bill would require the WTCS Board to approve a college district's budget as a condition of making incentive grants.

The proposed policy would create a potentially serious conflict with the WTCS Board's longstanding role to monitor district financial practices and to assure district financial accountability. The WTCS Board would be forced to "approve" budgets it must then monitor as an independent agency. While each district performs an external annual audit, the WTCS Board regularly collects and analyzes district financial and budget data as a requirement of both statutes and rules, at both the state and federal level.



Besides creating a potential conflict, this provision would create a huge administrative burden for the WTCS Board staff at the same time they are facing a proposed 5% cut in agency operations through this budget. The WTCS Board already receives each district's budget annually as a matter of course, and there is no indication from any party that there has been anything but open cooperation of data sharing between the districts and WTCS Board, whether requested annually, or requested by the Board on a one-time basis.

Finally, local board property tax levies have grown as a percentage of statewide WTCS operating budgets for more than two decades, while state support has steadily declined as a share of operations. It has never been advisable to shift the approval of local districts' (local governments') budgets to a state-level board, and is less so as the state share of support continues to decline.

**State Control of Local College Program Offerings -- SB 55/AB 144 provides that the WTCS Board can mandate local college program offerings (program creation, modification, and termination) to the college districts.**

Currently, local colleges, in close cooperation with district business and industry, and with other community input, recommend the best use of limited resources resulting in a recommendation to create, modify, or terminate programming. Each of these recommendations *currently must be reviewed and approved by the WTCS Board* before being implemented. The WTCS Board rightfully assesses how the recommended programming change fits into overall state strategic needs and regional (multi-district) needs, and assures that the change neither eliminates a critical program resource nor creates a duplication of services that are already adequate.

Under the current model, more than 150 programs have been created and more than 150 terminated in the past five years alone. This responsiveness to local and state needs represents the very best of excellent shared governance.

Currently, every program in every district has a community-based advisory committee comprised of business and industry representatives (more than 1,000 citizen committees statewide). They work with the colleges to assure that the program mix and the curriculum within programs meets community needs. Each district also has a private industry competition committee available to assess the affect of a proposed offering on private service providers. This responsiveness to community is balanced by appropriate statewide oversight through the WTCS Board's authority to approve district recommendations consistent with overall state and regional needs.

Finally, the proposed policy does not account for issues that must be (and currently are) handled at the local level such as: the availability of district funding to make the program change, the presence or absence of local business and industry partnerships and contracts for services, the availability of appropriate college facilities and equipment, and the constraints presented by the districts' collective bargaining agreements.

**Technical College Authority to Operate Charter Schools -- SB 55/AB 144 would extend the authority to create charter K-12 institutions to all sixteen technical college districts.**

Under current law, Milwaukee Area Technical College may (but has not exercised the authority to) contract with the local school board to operate a charter school. The budget bill would extend this authority to all technical colleges in the state.

Technical colleges have dramatically increased their partnerships with K-12 districts in areas such as contracting to serve at-risk youth, partnering in youth apprenticeship programs, offering expanded opportunities for high school learning and dual credit through Youth Options programming, and a host of other activities. The colleges and WTCS Board are committed to expanding mutually beneficial partnerships that best serve our students and taxpayers.

While we do not outright oppose this authority, it was not requested by our colleges or the WTCS Board, we have not used it to the extent already available, and, in an environment of limited resources and growing mutually beneficial partnerships, see no opportunity to use the authority in the future.

**Alternative Instructor Certification -- SB 55/AB 144 would give local boards the authority to employ an instructor who does not meet current certification standards if the instructor holds a "valid industry certification" that is recognized by the WTCS Board.**

This is a very complex and important issue for the WTCS that will increase in importance as competition for qualified instructors increases. The WTCS is committed to working on this issue in partnership between the WTCS Board, local boards, and faculty organizations. It should not be mandated outside of the educational community through the budget.

**Public Broadcasting Governance -- SB 55/AB 144 proposes the creation of a private, non-profit Educational Broadcasting Corporation to manage public broadcasting operations in Wisconsin, which would replace the Educational Communications Board and the broadcasting division of UW-Extension.**

Under this proposal, a transitional board would manage the transfer of services to the new corporation and apply to the FCC for the transfer of licenses. While the broadcasting services of Milwaukee Area Technical College (license-holder for Milwaukee Public Television channels 10/36) would not be subject to the proposed restructuring, MATC does receive significant funding through the ECB budget.

While several commissions and studies have considered this issue, no consensus has ever emerged that a change in governance would benefit public broadcasting or the state. Public broadcasting should remain under the current governance structure to assure that the delivery of educational content remains a vital component of public broadcasting, particularly in the transition to digital broadcasting and new opportunities for content delivery.

We respectfully request the removal of these non-fiscal policy items from SB 55/AB 144. Thank you sincerely for your consideration. We look forward to working with you through the budget process and hope you will contact the Association if we can be of assistance.

Sincerely,



Paul Gabriel  
Executive Director

cc: Senator Chuck Chvala, Majority Leader, Wisconsin Senate  
Representative Scott Jensen, Speaker, Wisconsin Assembly  
Association Legislative Committee members  
Ed Chin, State Director, WTCS  
College Presidents



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**Senate Committee on Education**  
Senator Richard Grobschmidt, Chairperson

March 16, 2001  
Milwaukee Area Technical College South Campus  
Oak Creek, Wisconsin

Testimony of

Paul Gabriel  
Executive Director  
Wisconsin Technical College District Boards Association

**Board Partnership Projects with the K-12 Community** -- The sixteen districts of the Wisconsin Technical College System (WTCS) have undertaken an exciting range of new partnerships with the K-12 community, some of which you will hear about from other witnesses today. Thanks to the Legislature's support, more than 7,500 recent high school graduates received a \$250 per semester TOP Grant this year to help pay tuition costs to enroll full time in technical and occupational programs (\$1,000 over two years).

One of the key roles of local college boards is to link with community stakeholders to assure the colleges are best meeting community needs. In fall, 2000, college board members and presidents statewide attended and presented to each of 15 regional meetings of the Wisconsin School Boards Association. This was the first time WASB invited external partners to join its organizational meetings.

We followed this by presenting a two-day, highly interactive exhibition (more than 5,000 square feet) at the State Education Convention for hundreds of school board members and school administrators. Exhibits included live interactive video instruction from a high-tech manufacturing lab, live surgical laser, 911 call center, and sonography (ultrasound) demonstrations, a virtual firing range allowing visitors to handle emergency law enforcement scenarios, and many other exhibits presented by 150 staff and students from every college.

Local college boards are dedicated to building on our partnerships not only through K-12 programming partnerships such as Youth Options, Apprenticeships, contracts to enroll at-risk youth, basic skills, literacy and ESL programming, but also to work with boards, counselors, teachers and others who are the opinion leaders of our K-12 institutions.

**WTCS Funding in the 2001-2003 State Budget** -- The initial 2001-2003 budget bill would implement a reduction from current base funding at a time Wisconsin most needs access to technical college training and services. The budget proposes no increase in general aid (general aid has already fallen to less than 21% of statewide operational cost this year, down from 37% in 1980). It funds none of the strategically targeted categorical projects proposed such as funding for assistive technology for disabled Wisconsinites, new technology innovation for our faculty, pre-college programming for middle-schoolers, or career laddering projects to promote training in the workplace for critically needed skilled workers such as nurses.

The only new programmatic funding is \$1 million per year (16% of the WTCS's request) to assist in creating a virtual campus linking electronic offerings statewide, coordinating curriculum, and moving closer to allowing Wisconsinites access to our colleges at the time, place, and pace learners need to succeed. Unfortunately, this funding is from proceeds of the dissolution of the Wisconsin Advanced Telecommunications Foundation and is likely subject to legislative or legal challenge.

Besides a modest increase in TOP grant funding (for grants themselves; the TOP grant program has no administrative or overhead component), the WTCS is slated for a \$5 million total cut from the current base in capacity-building grants, from \$5 million per year, to \$3 in FY 2002 to \$2 in FY 2003. As its statewide role to provide strategic direction, coordination and accountability increases, the WTCS Board staff is slated for and a 5% funding reduction. It has already absorbed staff cuts in recent years, and is significantly leaner than in the past.

The budget scenario occurs at the time that Wisconsin most needs to re-invest in its technical colleges:

- A slowing economy and dislocation of workers is traditionally a time when more individuals than ever count on the WTCS.
- WTCS students (more than 500,000 individuals last year!) overwhelmingly stay to live and work in Wisconsin. We are an important element in solving Wisconsin's "brain drain."
- Our 1994-95 graduates have averaged better than a 10% net per year wage increase annually, greatly contributing to tax revenue and economic vitality.
- More than 5,000 businesses contracted with a technical college for custom training last year, often to be provided right on the shop floor, or using electronic delivery.
- Employers express a better than 98% satisfaction rate with WTCS graduates. We guarantee a graduate will have the necessary skills to enter his/her field, or retraining is provided at no cost.

Three technical college districts are already at, or very close to, the statutory limit for local taxing (1.5 mills) and have experienced less than average property value growth relative to the balance of the state. They are facing program and service cuts, layoffs of staff, and long waiting lists in remaining programs. These districts include all of Milwaukee County, and Western and Southwestern Wisconsin.

Even though other districts can levy locally under the 1.5 mill cap, a slowing or stagnation in property value increases will bring every district to crisis very rapidly. However, even with strong property value growth, the lack of state support means greater and greater property tax burdens for Wisconsinites.

Unlike the UW System, the costs to retain and recruit excellent teachers, to provide capital facilities, to meet increased energy and technology costs, and to cover debt service and increasing health care costs, are not part of the state budget and are carried locally. As state funding declines, it's harder and harder for the colleges -- although they are very willing -- to invest in the leading-edge training and services our learners and business and industry need to keep the economy strong.

Editorials, news articles, the WMC member newsletter "Insight," and many business leaders and citizens note that we have a great technical college system that is at the heart of our economic success and our individual and collective well-being as a great state.

We train the individuals who restore your power after a storm, the EMT who answers your neighbor's call for help, the trusted persons who care for your children at daycare, the technician who analyzes your blood sample at the hospital lab, the young woman who maintains your computer network, the individual who maintains the aircraft engines that transport you, and the men and women who staff your local police and fire departments.

Perhaps you have seen some of these individuals in media spots telling you that these are the graduates of Wisconsin's Technical Colleges. The spot concludes by asking: *Where would we be without them?*

As the budget bill stands today, we may, unfortunately, have the opportunity to find out.

We do not mean to be unduly alarmist, to suggest that this is anything but an extremely tight budget, or to suggest that Wisconsinites don't deserve tax relief and excellent stewardship of their hard-earned tax dollars. We do suggest that fully funding the WTCS budget request of less than \$37 million over the biennium is the right thing to do for increased productivity, for building our quality of life, for the 500,000 who enrolled with us last year and who will this year, and next year, and for the economic vitality that helps create the very tax revenue upon which every other great endeavor of public life in Wisconsin depends.

Thank you.

**Invest in the Wisconsin Labor Force  
Invest in the Wisconsin Technical College System**

**Presented by**

**Michael Rosen, Ph.D.**

**John Birkholz, Ph.D.**

**Senate Education Committee**

**March 16, 2001**

**Invest in the Wisconsin Labor Force  
Invest in the Wisconsin Technical College System**

**DR. JOHN R. BIRKHOLZ  
DR. MICHAEL ROSEN**

Senator Grobschmidt, distinguished committee members, Dr. Birkholz and I would like to thank you for providing us with the opportunity to address you. The state of Wisconsin is facing severe labor shortages in skilled labor markets. The state's labor force, its human capital, is an aging group. In fact, many of Wisconsin's largest employers will lose 50% or more of their work force to retirement in the next five years. Academic, business, and trade publication studies are uniform in agreeing that the skilled labor shortage is the principal obstacle to economic growth in Wisconsin.

We cannot expect to increase the size or level of labor force participation to solve this problem. Education and training of the existing labor force is the key to solving Wisconsin's shortage of skilled and technical workers.

While job growth projections indicate an increased demand for workers with four year and post-graduate degrees, both the U.S. Department of Labor and the Wisconsin Department of Development have documented that most new jobs will require less than a four-year degree. The DOL projects an increase from 1996 to 2006 of less than 1% in the overall share of workers in occupations requiring a baccalaureate degree. At the same time, 70% of all new jobs, according to DWD, will require post-secondary training -- exactly the kind of education and training that the Wisconsin Technical College System (WTCS) provides.

The WTCS can help solve the growing labor shortage problem. MATC is the flagship technical college in a system that is organized to provide apprenticeship and skilled worker training. MATC provides 150 associate degree and diploma programs to 65,000 students on 4 campuses. Our cost per FTE is the sixth lowest in the state while we provide the greatest number of programs and serve the highest number of students in non-funded Basic Skills programs.

Advisory Committees composed of CEOs and Human Resource officers connect our degree granting programs to the industries we serve. They ensure that our curriculum and technologies are state-of-the-art and that our students graduate with industry specific skills. The WTCS's record of success in training and placement is unparalleled. We have 4.5 jobs for every graduate. 96% of our graduates are employed within 6 months of graduation,



83% in their area of study, at an annual starting income of \$23,000, and 90% live and work in Wisconsin.

The WTCS cannot provide the quality or quantity of training that our students, workers, and industries need and deserve without increased financial support from the state. Unfortunately, state support has been declining. The state's contribution to the WTCS has declined from 35% to 20%. The decline in state support has been made up by a combination of increased taxes, cuts in programs, and increases in tuition and fees. The state's failure to invest in the WTCS is undermining one of Wisconsin and Milwaukee's key strategic assets -- universally accessible, technical education and training.

The state needs to invest in Wisconsin's workforce. Investing in human capital is the key to competitive advantage in a highly competitive global economy and the answer to industry's skilled labor shortage.

An investment in the WTCS will more than pay for itself in increased productivity and economic growth. That skilled labor will also pay taxes, as will the businesses that hire these workers, as companies grow and expand. A recent study conducted by the University of Wisconsin Milwaukee and MATC also concluded that post secondary education leads to better pay and improved chances for advancement for workers.

The state needs to increase its investment in the WTCS by increasing the state aid appropriation by 4.1% or a little more than \$5 million for each year of the biennial budget. An economic impact study indicates that if the state does not make this investment thirteen of the sixteen WTCS districts will be forced to cut sections and programs, delay implementing new technologies and new high technology programs and increase tuition and fees. Unfortunately, the current budget proposal includes no increase in state aids.

It is critical that the state provide additional support to three districts, Milwaukee, Western and Southwestern, all property-tax-poor districts that have long been at the mill rate limit. The property-tax-poor districts, with 29% of the state's total FTEs, need a targeted investment or appropriation that recognizes the particular hardships that they are experiencing. There is a precedent for such action. In the late '80s, the state legislature designated a "distressed district" category and provided special appropriations for technical colleges meeting the designation.

The argument that districts should simply increase their mill rates fails to address our problems in two ways. First, three districts are already at the statutory maximum. Second, relying solely on the property tax will lead to large inequities between the property-rich and property-poor districts.

In a recent article James Haney, President of Wisconsin Manufacturers and Commerce noted that the WTCS has "...a comprehensive strategy to increase the current skills of Wisconsin's workforce, expand the pool of skilled workers and increase access with leading edge instructional technology and techniques. We applaud their initiative...."

The state of Wisconsin is faced with a critical decision. I can invest in the WTCS, the institution established by the state to provide a skilled workforce, or we will continue to experience labor shortages that will restrict economic growth as well as the continued and rapid erosion of the WTCS.

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# WISCONSIN EDUCATION ASSOCIATION COUNCIL

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Affiliated with the National Education Association

*Every kid  
deserves a  
Great School!*

**Testimony to Senate Education Committee  
Wisconsin Education Association Council  
Leigh Barker, WTCS Consultant  
March 16, 2001**

**Thank you for this opportunity to speak with you about the Governor's proposed budget for the Wisconsin Technical College System.**

**I am speaking on behalf of WEAC, which represents approximately 3,000 faculty and staff in WTCS. I'm here to bring you WEAC's message that "Every Kid Deserves a Great School," and that includes a great technical college school. Every kid—every Wisconsin citizen—deserves the great technical college schools that Wisconsin has.**

**On Wednesday of this week I was involved in a hearing at one of our tech colleges, where the college used an attorney from the Wisconsin Association of School Boards. Following our proceedings he commented to me, "I thought I knew what the technical colleges do, but I had no idea of the breadth of what goes on here." The arbitrator, the distinguished Howard Bellman, added that the technical colleges are Wisconsin's "gem" that people just take for granted. He went on to say that other states' community college systems don't even come close to this system.**

**I believe you do know the breadth of what the technical colleges do, because you, the legislature, continue to ask us to do these things. I am here today to tell you that the technical colleges are doing them:**

**Occupational Training in hundreds of occupations, contracted services to business and industry, Adult Basic Education, English as a Second Language, Advanced Certificate Training to workers who already have diplomas or Associate degrees, working with At Risk high school students, Youth Options, working with UW on transferability issues, meeting with businesses to adapt and update programs, developing new programs including Internet and distance ed courses, working with the widest mix of students the widest age range of students and the widest ability level of students of all the educational systems.**

**The staff in the technical colleges are doing all of these things – and doing them well. This system definitely is Wisconsin's "gem." However, the state is going to lose this gem if you don't provide it with the resources it needs to fulfill its many missions.**

**-over-**

Terry Craney, President  
Michael A. Butera, Executive Director



**The WTCS needs the 4.1% increase in general state aid that the agency proposed. Funding the WTCS is an investment in our workforce, in business, in the economy, in our future. The entire budget as proposed by the agency can be funded for less than \$36 million over the biennium. This \$36 million is probably the best investment the state could make.**

**For the past ten years, the state has left the technical colleges to fund themselves from property tax levies. The state share has steadily eroded, while mill rates, especially in some districts, have steadily increased. You can no longer do that because, once again, you've let it reach a crisis level. The state must step in and contribute to this vitally important cause.**

**In addition,**

**WEAC opposes the use of WATF funds to pay for any executive items in the budget.**

**WEAC urges that you remove the non-fiscal policy items from the budget. The WTCS mission is already expansive; the colleges need to be able to focus on their existing mission. The tech colleges neither want nor need to operate a charter school.**

**Finally, WEAC urges that you remove the alternative certification proposal for WTCS staff. The WTCS certification system works well. It allows the system to bring in "non-teachers" already, and then provides for development in teaching and classroom management techniques and skills. WEAC strongly opposes changes to the existing certification of WTCS instructors.**

**Thank you.**

**Leigh Barker  
WEAC WTCS Consultant  
Wisconsin Education Association Council  
33 Nob Hill Drive  
Madison, WI 53703  
608-276-7711 ext. 265**

Testimony March 16, 2001  
Senate Education Committee  
Dennis W. Redovich

**Center for the Study of Jobs & Education in Wisconsin**  
**6438 Sycamore St. Greendale WI 53129 414-421-1120**  
 Center Director, Dennis W. Redovich Ed.D

**Center Report 4 March 2001**  
**The Output of the Wisconsin Technical College System**

The annual WTCS Graduate Follow-up prepared by WTCS Board staff is one of the finest in the U.S and is a major source of data for this report. Reports such as the "Graduate Follow-up 1998-99" April 2000, WTCS Board, reflects only those students who graduate. Most Wisconsin Technical College students do not graduate but receive an excellent education in courses, which allows them to be employed successfully.

\*Health occupations 6,603 (40%) and Business 2,620 (17%) graduates constitute 57% of 1999 WTCS graduates statewide. Technical 950 (6%) and Industrial 1,952 (13%) total 18% of 15,365 graduates statewide from all programs..

\* Nursing Assistant graduates (2,577) in 1999 represent 17% of all graduates. This total is 2.7 times the 950 Technical Division graduates from 44 programs statewide. Nursing Assistant graduates have been about double Technical graduates for 10 years..

\* Annual median salaries for all WTCS graduates increased 72% from \$14,448 in 1988 to \$24,951 in 1999. The increase from 1998 to 1999 was 8.5% from \$22,982 to \$24,951.

\* Health Occupations Associate Degree graduates annual median salary (\$30,553) with 1,431 graduates in 1999 exceeds Technical median salaries of \$28,080 with 950 graduates. Statements and graphs that indicate Technical, Service and Industrial graduates secure the highest paying jobs are very misleading. Graduates from these areas include the salaries of numerous graduates who were employed prior to graduation with years of experience in their field. Fire Fighter, Police Officer and technicians would be examples. (48% of all graduates were 25 or older) Health Occupations graduates include 3,957 Short Term graduates (2,577 Nursing Assistants) with median salaries of \$18,822 that are not comparable to graduates of two year Technical and Service programs.

\* Women in 1999 with 9,325 graduates (61%) far outnumber men 5,980 (39%) of all graduates. Women dominate in programs with the highest starting salaries after graduation, such as number one Dental Hygienist (\$43,677) and AD Nursing \$32,566. Women constitute 83% of Health Occupations programs and 75% of Business graduates that include high paying computer programs with large numbers of graduates. There is no justification for non-traditional programs for women based only on higher salaries.

### **Advisory Board**

Anne Arnesen WISKIDS, Frances Bartelt Communications Dir., Dr. Gerald Bracey Ed. Res., August Cibarich WI DWD Leon Todd Consultant, Att. Ed Garvey, Bob Haase Sen. Citizens, U.S. Rep. Jerry Kleczka, Sen. Gwen Moore, Prof. Alex Molar UWM, Robert Miranda Ed. For the People, Susan Ohanian Education Author, Dr. Michael Rosen John Weigelt MPS-ASC, David Wood UW-Madison COWS

## Center for the Study of Jobs & Education in Wisconsin

The Output of the Wisconsin Technical College System  
Center Report 4 March 2001 By Dennis W. Redovich

**Table I WTCS Programs with 100 or More Graduates 1998 to 2000**

Instructional Program	Grads 2000	Grads 1999	Grads 1998
<b>Rank Order 2000</b>			
1. 30 Nursing Assistant	2,597	2,578	2,510
2. 30 EMT Basic	1,043	980	978
3. 10 AD Nursing	772	774	818
4. 10 Accounting	625	598	685
5. 10 Police Science*	463	433	486
6. 10 CIS Prog/Analyst	407	383	342
7. 10 Marketing	388	354	373
8. 10 CIS Computer/Spec.	311	268	242
9. 10 Supervisory Mgt*	290	216	214
10 31 Practical Nurse	279	229	242
11 30 Police Recruit Sch.	273	214	295
12 31 Medical Assistant	244	215	286
13 10 Adm. Assistant	212	181	216
14 30 Farm Bus/Prod Mgt.	193	251	189
15 20 College Parallel	192	196	180
16 31 Welding	176	164	183
17 10 Mech. Design Tech.	165	165	189
18 31 Office Assistant	153	156	162
19 31 Barber/Cosmetology	152	161	134
20 10 Dental Hygienist	151	133	148
21 30 Truck Driving	143	139	131
22 10 Child Care & Dev.	141	156	137
23 10 CIS Network Spec.	137	81	30
24 32 Mach. Tool Tech.	130	138	122
25 10 Commercial Art	122	98	111
26 31 Mach. Tool Operator	120	154	112
27 31 Wood Technics	120	100	96
28 32 Automotive Tech.	116	128	124
29 10 Occupational Ther.	109	113	132
30 30 Custodial Services	106	81	65
31 10 Electronics	102	110	117
32 10 Electromech. Tech.	100	85	109
	10,532	10,032	10,158
% of Total Graduates	68%	65%	65%
Total Graduates from 285 Programs	15,577	15,365	15,646

Source: Wisconsin Board of Technical College Graduate Follow-up Reports

Nursing Assistant has been the number one program in numbers of graduates in the 1990's and represents 17% of graduates in 2000.

**Table II Median Annual Salaries of Graduates 1999 and 1998  
Programs with 100 or More Graduates**

Instructional Program	Salary 1999 Median	Graduates Number of	Salary 1998 Median	Graduates Number of
Salary Rank				
1. 10 Dental Hygienist	\$43,677	133	\$39,232	148
2. 10 Supervisory Mgt.*	\$36,688	216	\$32,498	214
3. 10 CIS Prog/Anal.	\$34,007	383	\$32,496	342
4. 30 EMT Intermediate*	\$33,067*	119	\$26,946*	116
5. 10 AD Nursing	\$32,556	774	\$31,176	818
6. 30 Truck Driving	\$31,198	139	\$26,004	131
7. 30 Police Recruit Sch.*	\$31,031*	214	\$30,926*	295
8. 20 College Parallel*	\$31,019*	196	\$21,533*	180
9. 10 CIS Computer Sp	\$30,000	268	\$30,000	242
10. 30 Farm Bus & Pr*	\$28,000	251	\$25,000	169
11. 10 Electronics	\$27,977	110	\$27,501	117
12. 10 Police Science*	\$27,038	433	\$24,742	486
13. 10 Mech Design Te	\$26,500	165	\$26,748	189
14. 10 Bus. Mid Mangt.*	\$25,988*	124	\$24,000*	128
15. 32 Mach Tool Tech	\$25,584	138	\$25,000	122
16. 31 Mach Tool Oper.	\$24,948	154	\$24,744	112
17. 31 Welding	\$24,568	164	\$24,564	183
18. 31 Practical Nurse	\$24,483	229	\$23,600	242
19. 10 Marketing	\$24,007	354	\$21,321	373
20. 30 EMT Basic	\$23,814	980	\$22,878	978
21. 10 Occup. Therapy	\$21,838	113	\$23,502	132
22. 10 Accounting	\$21,600	598	\$20,798	685
23. 32 Automotive Tech	\$21,319	128	\$21,059	124
24. 10 Adm. Assistant	\$29,728	181	\$19,528	216
25. 31 Auto Body	\$19,761	100	\$20,278	90
26. 31 Dental Assistant	\$18,641	109	\$17,580	109
27. 31 Office Assistant	\$17,769	156	\$16,119	162
28. 30 Nursing Assistant	\$17,676	2,578	\$16,644	2,510
29. 10 Child Care & Dev	\$16,838	156	\$15,444	137
30. 31 Barber/Cosmet	\$14,975	161	\$13,981	134

Technology makes jobs simpler not more difficult and makes workers more productive. The great majority of the jobs of the future are the same jobs of the 20<sup>th</sup> Century with new technological tools making these jobs easier to do. A majority of jobs require only short or moderate length training or experience. The educational level and productivity of workers in the U.S. is the highest in the world.

Wisconsin has one of the finest technical college systems in the world. In FY2000 it cost the State of Wisconsin about \$140 million (about 14% of total WTCS revenues of about



\$971 Million) to provide education and training statewide for more than 400,000 students annually in the Wisconsin Technical College System. At least 50% of WTCS students are 25 or over (In 1999 48% of graduates were 25 or over). The Technical Colleges provide excellent individual courses and programs for more than 200,000 so-called adult learners annually at a cost far below the UW-System.

It costs the State of Wisconsin a GPR of about \$1 Billion (about 33% of UW-System revenues of about \$3 Billion) for about 129,000 full time students (headcount is not available). The UW-System in FY01 had 28,885 positions (not including hospitals and clinics) and was requesting 493 additional positions for FY 02. The WTCS has about 9,700 FTE employees and about 60,000 FTE enrollments.

**Table III Graduates by Instructional Division 1980 to 98-99**

Instructional Division	79-80	89-90	90-91	92-93	93-94	94-95	95-96	96-97	97-98	98-99	% of Grads
Health	3,556	4,295	5,010	5,735	5,765	5,859	6,139	6,383	6,184	6,103	40%
Business	2,335	3,099	3,329	3,045	2,945	2,803	2,782	2,795	2,661	2,620	17%
Industrial	2,704	2,157	2,008	1,949	1,946	1,794	1,816	1,833	1,854	1,952	13%
Service	419	768	974	1,219	1,349	1,304	1,234	1,260	1,293	1,135	7%
Marketing	864	1,025	1,161	1,051	1,001	1,027	986	1,019	1,079	970	6%
Technical	966	1,209	1,267	1,197	1,175	1,125	1,133	1,088	1,014	950	6%
Home Econ.	679	777	797	784	742	770	733	700	605	654	4%
Agribusiness	514	542	531	441	463	472	453	401	451	520	3%
Graphics	276	293	306	301	267	263	262	290	320	260	2%
Gen. Ed.	134	100	122	133	149	143	147	181	185	201	1%
Totals	12,447	14,265	15,585	15,835	15,882	15,560	15,785	15,951	15,846	15,365	100%

**Trends in number of graduates 1990 to 1999 are as follows:**

Rank Order Instructional Division	1999 Graduates	Number of Graduates peaked in 1984	1999	% Change
Health Occupations	4,295	16,622	6,103	+42%
Business	3,099	16,622	2,620	-15%
Industrial	2,157	16,622	1,952	-14%
Service Occupations	768	16,622	1,135	+48%
Marketing	864	16,622	1,079	+12%
Technical	1,209	16,622	950	-21%
Home Economics	879	16,622	654	-26%
Agriculture-Business	514	16,622	520	+1%
Graphics and Applied Arts	276	16,622	260	-6%
General Education	100	16,622	201	+101%
Total	14,265	16,622	15,365	+8%

**Table IV Graduates by Technical College Districts: Nursing Assistants, Short Term Programs, Technical, Industrial and Associate Degree Computer Programs**

Technical College	No. of Grads & Programs	Nursing Asst.	30 Short Term	600 Technical	400 Industrial	CIS Computer
		Grads %	Grads %	Grads %	Grads %	Grads %
1. Madison	2,095 (82)	259 (12%)	640 (30.5%)	102 (5%)	71 (3%)	111 (5%)
2. Milwaukee	1,710 (87)	77 (4.5%)	213 (12.5%)	110 (6%)	216 (13%)	112 (6.5%)
3. Northeast	1,314 (61)	128 (10%)	246 (19%)	113 (8.5%)	219 (16%)	60 (4.5%)
4. Fox Valley	1,312 (59)	125 (9.5%)	369 (28%)	75 (6%)	66 (5%)	57 (4%)
5. Western	1,120 (58)	319 (28.5%)	410 (37%)	26 (2%)	128 (11%)	57 (5%)
6. Indianhead	1,057 (50)	285 (27%)	449 (42.5%)	52 (5%)	196 (18.5%)	46 (4%)
7. Gateway	948 (53)	223 (23.5%)	359 (38%)	49 (5%)	19 (1.5%)	58 (6%)
8. Moraine Park	907 (61)	151 (17%)	328 (36%)	71 (8%)	112 (12%)	40 (4%)
9. Waukesha	820 (59)	139 (17%)	373 (45.5%)	81 (10%)	56 (7%)	35 (4%)
10. Chippewa Valley	814 (45)	88 (11%)	232 (28.5%)	47 (6%)	138 (17%)	45 (4.5%)
11. Northcentral	772 (40)	195 (25%)	282 (36.5%)	84 (11%)	48 (6%)	56 (7%)
12. Midstate	646 (39)	163 (25%)	281 (44%)	51 (8%)	10 (1.5%)	23 (3.5%)
13. Lakeshore	602 (40)	184 (27%)	313 (46%)	30 (4%)	29 (4%)	12 (2%)
14. Blackhawk	573 (39)	119 (21%)	252 (44%)	17 (3%)	46 (8%)	35 (6%)
15. Southwest	392 (35)	69 (18%)	85 (22%)	23 (6%)	44 (11%)	19 (5%)
16. Nicolet	201 (21)	54 (27%)	77 (38%)	7 (3.5%)	13 (6.5%)	17 (8.5%)
Totals % of Grads	15,365	2,578 (17%)	4,909 (32%)	938 (6%)	1,411 (9%)	783 (5%)

As shown in Table V AD Nurses is the number one program in numbers of graduates from nine of the sixteen Technical college Districts.

**Table V Top Five Programs in Number of Graduates By WTCS District 2000**

Technical College	No. 1	No. 2	No.3	No.4	No. 5
	No. of Grads				
1. Madison	Nursing 96	Accounting 78	CIS Prog/Anal 68	Marketing 57	Veterinary Tech 39
2. Milwaukee	Nursing 70	Accounting 69	CIS Computer 68	Bus. Mgt. 65	Police Science 65
3. Northeast	Accounting 69	Nursing 53	Police Sci. 50	Mach. Tool 47	Marketing 40
4. Fox Valley	Truck Driving 104	Police Sci. 71	Nursing 57	Marketing 54	Fire Prot. Tech. 48
5. Western	Nursing 51	Accounting 38	CIS Computer 38	Com. Art 33	Sup. Mgt. 29
6. Indianhead	Nursing 47	Adm. Assist. 38	Accounting 35	Office Asst. 28	Med. Asst. 27
7. Gateway	Nursing 86	CIS Computer 38	Accounting 42	Marketing 34	Graphic Tech 29
8. Moraine Park	Tool & Die 56	Pract. Nurse 40	Nursing 34	Accounting 34	CIS Tech Sup 26
9. Waukesha	Nursing 41	Accounting 33	Marketing 21	Marketing 21	CIS Prog/Anal 19
10. Chippewa Valley	Police Rec Sch 61	Nursing 55	CIS Prog/Anal 45	Police Sci. 36	Med. Office 35
11. Northcentral	Nursing 46	Dental Hygiene 41	Arch. Design 35	Accounting 34	CIS Prog/Anal 32
12. Midstate	Human Res. 31	Medical Asst. 28	Barber/Cosm. 25	Nursing 24	CIS Prog/Anal 23
13. Lakeshore	Nursing 45	Accounting 35	Sup. Mgt. 28	Mat. Mgt. 20	Medical Asst 17
14. Blackhawk	Police Sci. 36	Nursing 25	Accounting 23	CIS Comp.22	Elec. Power 15
15. Southwest	Nursing 25	Accounting 22	Pract. Nursing 16	Agribus/Sci 14	Bricklaying 13
16. Nicolet	CIS Prog/Anal 17	Nursing 10	Police Science 10	Auto Tech 10	Medical Asst. 8
Totals	881	674	592	533	465



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## WI Labor Market Information

### 30 Occupations: Most Annual Job Openings - Wisconsin Projections 1998- 2008

#### by Education and Training Typically Required

OES Code	Occupational Title	Average Annual Openings <sup>(1)</sup>	Education and Training Typically Required <sup>(2)</sup>
49023	Cashiers	3,610	Short-Term On-The-Job Training
49011	Salespersons, Retail	3,420	Short-Term On-The-Job Training
65008	Waiters & Waitresses	3,030	Short-Term On-The-Job Training
55347	General Office Clerks	2,730	Short-Term On-The-Job Training <sup>(3)</sup>
65041	Food Prep/Service Wkrs, Fast Food	1,980	Short-Term On-The-Job Training
65038	Food Preparation Workers	1,640	Short-Term On-The-Job Training
67005	Janitors & Cleaners	1,350	Short-Term On-The-Job Training
66008	Nursing Aides & Orderlies	1,230	Short-Term On-The-Job Training <sup>(3)</sup>
98902	Hand Packers & Packagers	1,230	Short-Term On-The-Job Training
79041	Laborers, Landscaping/Groundskeeping	1,050	Short-Term On-The-Job Training
55305	Reception/Information Clerks	980	Short-Term On-The-Job Training <sup>(3)</sup>
97105	Truck Drivers, Light	890	Short-Term On-The-Job Training
65005	Bartenders	800	Short-Term On-The-Job Training
55108	Secretaries, Except Legal or Medical	790	Short-Term On-The-Job Training <sup>(3)</sup>
49026	Telemarketers/Door Sales/Related Wkrs	790	Short-Term On-The-Job Training
68038	Child Care Workers	730	Short-Term On-The-Job Training
87102	Carpenters	940	Long-Term On-The-Job Training <sup>(4)</sup>
85132	Maintenance Repairers, General Utility	760	Long-Term On-The-Job Training <sup>(4)</sup>
51002	Office/Admin Support Supvrs/Mgrs	1,010	Work Experience <sup>(3)</sup>
41002	Marketing/Sales Supervisors	950	Work Experience
81008	First Line Supervisors: Prod/Oper	730	Work Experience
97102	Truck Drivers, Heavy	1,440	Post-Secondary Vocational Training <sup>(4)</sup>
68005	Hairdressers/Hairstylists/Cosmetologists	750	Post-Secondary Vocational Training <sup>(4)</sup>
32502	Registered Nurses	1,560	Associate Degree <sup>(3)</sup>
31308	Teachers, Secondary School	1,770	Bachelor's Degree
31305	Teachers, Elementary	1,130	Bachelor's Degree

49008	Sales Rep, Mfg and Wholesale	1,030	Bachelor's Degree
25102	Systems Analysts	970	Bachelor's Degree <sup>(3)</sup>
25104	Computer Support Specialists	780	Bachelor's Degree <sup>(3)</sup>
19005	General Managers & Top Executives	2,310	Work Experience, Plus a Bachelor's or Higher Degree

Source: DWD, Bureau of Labor Market Information and Customer Services, Projections Unit

**Notes:**

(1) Average annual openings is the sum of openings from newly created jobs and permanent separations.

(2) Typically required means this is the most common way people are expected to enter the occupation during 1998 to 2008.

(3) A Wisconsin youth apprenticeship program provides exposure to this occupation.

(4) A Wisconsin adult apprenticeship program provides training in this occupation.

Employment rounded to nearest 10.

Information derived using 1998 OES/Wage data and unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau.

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Updated February 13, 2001  
 Division of Workforce Development  
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**Presentation to State of Wisconsin Senate Education Committee  
March 16, 2001 MATC-Milwaukee South Campus  
Dennis W. Redovich, Center for the Study of Jobs & Education in Wisconsin**

Technology makes jobs simpler not more difficult and makes workers more productive. The great majority of the jobs of the future are the same jobs of the 20<sup>th</sup> Century with new technological tools making these jobs easier to do. A majority of jobs require only short or moderate length training or experience. The educational level and productivity of workers in the U.S. and Wisconsin is the highest in the world.

Wisconsin has one of the finest technical college systems in the world. In FY2000 it cost the State of Wisconsin about \$140 million (about 14% of total WTCS revenues of about \$971 Million) to provide education and training statewide for more than 400,000 students annually in the Wisconsin Technical College System. At least 50% of WTCS students are 25 or over (In 1999 48% of graduates were 25 or over). The Technical Colleges provide excellent individual courses and programs for more than 200,000 so-called adult learners annually at a cost far below the UW-System.

It costs the State of Wisconsin a GPR of about \$1 Billion (about 33% of UW-System revenues of about \$3 Billion) for about 129,000 full time students (headcount is not available). The UW-System in FY01 had 28,885 positions (not including hospitals and clinics) and was requesting 493 additional positions for FY 02. The WTCS has about 9,700 FTE employees and about 60,000 FTE enrollments.

MATC-Madison has the largest number of graduates in the system, 2,095 in 2000. This is primarily due to the large number of Short-Term graduates 640 (30.5% of Madison graduates) including 259 Nursing Assistant graduates. Short-Term program graduates have been increasing and represented 32% (4,909) of the 15,577 graduates in 2000.

The United States is the only industrialized country in the world that charges tuition for vocational training. In countries like Germany even medical students do not pay tuition and students from low-income families living expenses may be subsidized while they are enrolled in school. In some poorer industrialized countries, such as Ireland, university students pay tuition but not vocational students.

In Wisconsin students enrolled in so-called vocational/technical programs pay a tuition which is comparable to those charged at two year UW campuses. The percentage of instructional costs charged to students in WTCS is comparable to the UW-System. Even in programs like Child Care and Nursing Assistant where students in too many cases start at wages not much above minimum wage. In FY2000 total student tuition revenues for the WTCS was \$87 million; the State of Wisconsin GPR contributed \$141 million GPR while local property tax paid \$491 million. The state is greatly under funding the WTCS System, which provides occupational training for more than 400,000 individuals annually.

## Center for the Study of Jobs &amp; Education in Wisconsin

Analysis of Graduates from UW-Madison and UW-Milwaukee  
by Selected Programs 1999.

Dennis W. Redovich March 2001

**UW-Madison Majors with 100 or More Graduates 1999**

Degree Major	Bachelor's	Master's	PhD	Professional	Total 1999 Degrees	% Total 1999 Degrees
1. Law				299	299	3.5%
2. Psychology	269	9	9	0	287	3.4%
3. English	220	42	15	0	277	3.2%
4. Political Science	226	15	14	0	255	3%
5. History	183	20	18	0	221	2.6%
6. Journalism	210	0	0	0	210	2.4%
7. Communication Arts	197	5	8	0	210	2.4%
8. Mechanical Engineer	139	51	20	0	210	2.4%
9. Finance/Banking	145	63	0	0	208	2.4%
10. Zoology	191	5	8	0	204	2.4%
11. Accounting	164	32	0	0	196	2.3%
12. Marketing	159	34	0	0	193	2.2%
13. Electrical Engineer	123	56	12	0	191	2.2%
14. Computer Science	90	70	83	0	173	2.0%
15. Nursing	113	50	4	0	167	1.9%
16. Sociology	120	20	17	0	157	1.8%
17. Educational Adm.	104	29	18	0	151	1.8%
18. Pharmacy	103	2	28	0	133	1.5%
19. Medicine	0	0	0	133	133	1.5%
20. Elementary Education	108	0	0	0	108	1.3%
21. International Relations	103	0	0	0	103	1.2%
<b>Total Degrees Top 21</b>	<b>2,967</b>	<b>503</b>	<b>254</b>	<b>432</b>	<b>4,086</b>	
<b>Percent of Total</b>	<b>53%</b>	<b>29%</b>	<b>37%</b>	<b>8%</b>	<b>48%</b>	
<b>Total Degrees 219 Majors</b>	<b>5,572</b>	<b>1,757</b>	<b>687</b>	<b>541</b>	<b>8,557</b>	
<b>% of All Degrees</b>	<b>65.1%</b>	<b>20.5%</b>	<b>8%</b>	<b>6.3%</b>	<b>100%</b>	

## UW-Madison 1999

Degrees in Computer, Math Biological or Physical Science Majors	Bachelor's	Master's	PhD	Professional	Total 1999 Degrees	% Total 1999 Degrees
1. Computer Science	90	70	83	0	173	2.0%
2. Biochemistry	71	5	16	0	92	1.1%
3. Bacteriology	65	14	10	0	89	1%
4. Mathematics	41	20	20	0	81	0.9%
5. Chemical Engineering	67	3	9	0	79	0.9%
6. Chemistry	30	11	38	0	79	0.9%
7. Molecular Biology	45	0	0	0	45	0.5%
8. Physics	7	12	23	0	42	0.5%
9. Genetics	34	2	3	0	39	0.5%
10. Cellular/Molecular Biology	0	2	25	0	27	0.3%
11. Statistics L & S	0	13	6	0	19	0.2%
12. Medical Physics	0	12	3	0	15	0.2%
13. Applied Engr. Physics	8	0	0	0	8	0.1%
14. Biology	7	0	0	0	7	0.08%
15. Bimolecular Chemistry	0	1	4	0	5	0.06%
16. Statistics	0	0	0	5	5	0.06%
17. Biomedical Engineering	3	0	0	0	3	0.04%
Total All Majors	468	165	240	5	808	9.3%

## UW-Milwaukee

Bachelor's Degrees by Major Science, Math & Computer	88/89	93/94	98/99	%1999 Grads	Change 89 to 99	% Change 89 to 99
1. Biological Science	65	73	57	2.2%	-8	-14%
2. Computer Science	37	33	28	1.1%	-9	-24%
3. Chemistry	13	9	17	0.7%	4	31%
4. Mathematics	26	14	5	0.2%	-21	-81%
5. Physics	6	4	2	0.01%	-4	-67%
6. Applied Math & Physics	4	3	1	0.0%	-3	-75%
Total Science, Math & Computer	151	136	110	4.2%	-41	-27%

Bachelors in science, math and computer science declined from 151 to 110 (-27%)

## UW-Madison Computer Science Graduates 1986-2000

UW-Madison Computer Science graduates peaked in 1987 with 236 total graduates and 154 Computer Science Bachelor's degrees. Master's degrees peaked in 1986 at 77. The number of Doctorate's peaked in 1996 at 20. Total Computer Science graduates declined from 236 in 1987 to 198 in 2000 (-16%). From 1986 to 2000, International students represented 33% of all Computer Science graduates and Minorities 6%.

Year	Bachelor's *	Master's	Doctorate	Minority	International	Total
1985-86	138	77	15	16 (7%)	60 (26%)	230
1986-87	154	70	12	13 (6%)	70 (30%)	236
1987-88	128	70	15	14 (7%)	54 (25%)	213
1988-89	89	56	6	7 (5%)	32 (21%)	151
1989-90	67	63	10	10 (7%)	32 (23%)	140
1990-91	62	65	17	4 (3%)	46 (32%)	144
1991-92	60	54	17	8 (6%)	42 (32%)	131
1992-93	82	70	9	8 (5%)	62 (38%)	161
1993-94	80	54	21	3 (2%)	75 (48%)	155
1994-95	87	56	16	10 (6%)	69 (43%)	159
1995-96	85	70	20	7 (4%)	66 (38%)	175
1996-97	91	61	17	10 (6%)	60 (36%)	169
1997-98	98	60	12	13 (7%)	68 (39%)	175
1998-99	106	68	12	14 (8%)	66 (35%)	186
1999-00	116	66	16	16 (8%)	65 (33%)	198
2000-01	18	4	4	4 (15%)	11 (42%)	26
Summer						
Totals	1466*	964	219	154	881	2649
	55%	36%	8%	6%	33%	

\*Includes 249 Graduates who had more than major including Computer Science



# MILWAUKEE

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## COUNTY LABOR COUNCIL AFL-CIO

633 S. Hawley Road, Suite 110

Milwaukee, WI 53214

### The Wisconsin Technical College System: A Key Link in Attracting and Retaining Good Jobs

Senator Grobschmidt, and Committee Members:

Thank you for coming to Milwaukee for this hearing. Our community, like similar communities around the state, is struggling to attract and retain good jobs. The obstacles are great: globalization, corporate mergers, and the fluctuations in various sectors of the economy. So we have to do all that we can to insure that we have the necessary infrastructure to support good jobs.

The legislature plays an important role in maintaining this infrastructure.

Transportation, technology, and public utilities are just a few elements of the infrastructure governed by the legislature. **A well-trained, highly-skilled workforce is the single most important component of the local economy.**

In the labor movement, we understand the difference between working as a machinist with CNC machines and working in a fast food restaurant. Both jobs require hard, fast-paced work. But the highly-skilled machinist makes enough money to buy a house, maybe even a cottage up North, and send their kids to college. The fast food worker is locked in an endless cycle of poverty.

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So we need to be sure that we have enough machinists, press operators, plumbers, medical technicians and diesel mechanics to fill all the jobs that require these skills.

Frankly, in many sectors, we have been falling behind.

As a member of the Commission that broke ground this week for the new Lynde and Harry Bradley School of Trade and Technology, we have been talking to our local community about vocational and technical education. Ten years ago, parents, community groups and even employers would have said three words...."Go to college." Today, that is rapidly changing. Worker shortages in various sectors of the local economy have pushed the issue of improving delivery of technical education to the top of the heap. Milwaukee Public School are developing a plan to not only build a new school, but to re-introduce trade and technology education systemwide. And employers have come to the forefront in our community, digging into their own pockets to help pay for the new Bradley Tech.

But we can't do it alone. And we can't continue to maintain the standard of excellence at Milwaukee Area Technical College if we continue to reduce the state share of its operating budget. MATC has done an admirable job of looking for grants (the National Science Foundation has provided millions of dollars to support the development of a new construction trades curriculum, for example), and efficiently using existing tax dollars. But you can only stretch so far and so thin.

The state needs to reward the Technical College System for its accomplishments. And the State needs to insure that we continue to develop the high-skilled workforce by investing more in the Technical College System. Our jobs depend on it.

**EDUCATION COMMITTEE  
SENATOR GROBSCHMIDT, CHAIRPERSON**

**PATRICK M. FLANAGAN  
GATEWAY TECHNICAL COLLEGE  
MARCH 16, 2001**

I would like to thank the Education Committee, Senator Richard Grobschmidt-Chairperson, as well as the distinguished committee members, for providing us the opportunity to appear today.

The state of Wisconsin, particularly in the region of southeastern Wisconsin, is in the middle of some challenging times. The challenges are not only the lack of skilled labor force, but the ability to provide education and training for the citizens at all levels in their careers.

Gateway Technical College, one of the 16 technical colleges, is located in the development corridor between Milwaukee and Chicago. The district includes the counties of Racine, Kenosha and Walworth. We are facing two major challenges, (1) the retraining of the many employees that have been laid off because of plant closings or downsizing, and (2) the education and training of our youth as they prepare for careers.

One of the six major goals of the Board of Trustees of Gateway Technical College is K-12 collaboration. This just happens to be the goal our President Sam Borden has assigned to me. We have developed a tracking system to monitor the number of students coming to college directly out of high school, and the number of students coming to us after three years of graduation. We are extremely pleased with the increase we have seen. The state report indicates that out of the class of 1998-99 16.96% of the students came directly to Gateway Technical College out of high school. Even though our goal is higher, we have seen great progress.

Gateway Technical College also ranks close to the top in the number of students taking Youth Option courses at the college with close to 500 students during this last semester. We are also working with the high schools as they develop Youth Apprenticeship Programs. All of these efforts also come with a price tag.

These are exciting times but challenging in Southeastern Wisconsin. Several of the high schools in our district have developed career academies. Kenosha Unified School District has developed the LakeView Technology Academy, which is located in LakeView Business Park. Racine Unified School District and several other schools are developing career academies using the school within a concept. We are also developing an academy at the Grand Geneva in Lake Geneva, which is owned by the Marcus Corporation. What I am trying to say is there is a lot of good things happening. All of these are good for the economy, but cost money.

In the Governor's budget, we asked for a 4.1% increase in general aid. What we saw was basically no increase. With the emphasis and rightly so in training the workforce for the high level skills needed by industry today, we as a college must be able to financially provide the service. With basically a zero increase in the general aid for the Wisconsin Technical College System, this year's budget at the college will be challenging.

Another example of the new type of skills needed was recently stated by the plant manager of DaimlerChrysler. As you are aware, DaimlerChrysler is adding on to their facility at an expense of over \$700,000,000. Human hands will not touch most of the parts being made for the engines. The plant manager stated that with the new line, 4 people will produce 3 times as much product as 39 employees could on the old line. This is staggering. Think of the skills needed by these employees. Our responsibility as a technical college must be to provide the type of training needed for these positions.

The challenge of providing these services must be shared by all - state government, the Wisconsin Technical College System and the local taxpayer. We at Gateway Technical College are receiving approximately 13% in state aid, which means the college is supported heavily by the local taxpayer. Can we expect the local taxpayer to continue to pick up a larger amount of the tab?

I hope as you deliberate during the coming legislative session, you will keep in mind the important role the Wisconsin Technical College System plays in the economy of the state and the great job we are doing. Do you want us to continue? I think so. We need your help.

Testimonial to the Senate Education Committee

Senator Grobschmidt Presiding

March 16, 2001

Milwaukee Area Technical College – South Campus

It is with honor that I am allowed to address the Wisconsin Senate Educational Committee today. I am Tim Opala, a student at Milwaukee Area Technical College South Campus and Vice President of the South Campus Student Senate. I am also a constituent of Senator Grobschmidt's district.

I am here to speak on the great need for a 4.1 percent increase in the budget for the Wisconsin Technical College System both for the 2001-02 and 2002-03 fiscal years. I am currently in the Computer Information Systems Associate Degree program and work in the Academic Support and Computer Center for South Campus. I see every day the increasing need and demand for more computer sections in programs and developmental courses in computer software. Yet if the state budget does not go into effect a possible 200 sections of classes will need to be dropped due to lack of funding and many of these will be computer courses. Courses that will help students finish degrees and go into the workforce as tax paying citizens. Courses that employers are demanding to keep their employees up to date with the latest technology and make the companies more efficient and profitable. The community needs MATC to provide the education to develop and enhance their skills in this fast paced technology driven society.

To paint an even bleaker picture for MATC is the fact that this district is one of three districts that are in fiscal distress. Southwest Technical College in Fennimore, Western Wisconsin in LaCrosse and Milwaukee Area Technical are requesting Limited Fiscal Grants to assist them in maintaining their quality services to the communities in which they serve.

Milwaukee Area Technical College needs your support for a 4.1 percent increase in the state aid maintenance budget and by obtaining the LFC grant. Without these increases MATC maybe forced to eliminate a possible 200 sections of courses or pass on the fiscal burden to the students. This will restrict the number of students able to obtain an education at MATC. MATC has already eliminated 1,300 class sections since 1995. Please help us maintain the quality education that MATC provides our community.

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Testimony before the  
Wisconsin State Senate Education Committee  
Randall Forney  
Vice President  
Milwaukee Area Technical College  
Student Senate Milwaukee Campus

Senator Grobschmidt and members of the Senate Education Committee it is a great honor to have this opportunity to address you today.

My name is Randall Forney. I live in the 7th Senate District at 1301 Madison Ave. Apt #4. I have the pleasure of serving this year as Vice President of the Milwaukee Campus Student Senate at the Milwaukee Area Technical College.

My trade was that of a finishing carpenter when I acquired a form of cancer. I spent the next two years in the hospital , and currently receive SSI for my income. I am currently enrolled in the Electronic Engineering Technology Training Program with MATC and carry a 3.96 grade point average. After MATC I am hoping to continue my education at MSOE finishing with a bachelor's degree in electrical engineering.

I do want to be a contributor to society and not a drain on societies resources.

On behalf of my fellow students I would like to voice our support for the Youth Apprenticeship as well as the school to work programs. I was in Washington D.C. earlier this week working with fellow students on Educational Legislation on the Federal Level. I believe that these two programs will help young students get an early start finding a profession that they can enjoy and be successful at.

Senator Grobschmidt a few weeks ago I listened to you speak in Madison about working toward a seamless K-16 education. The programs we are discussing will help toward the seamless K-14. I encourage support for both programs.

Briefly I call your attention to another problem which is right here at MATC and that is of the Distressed District. I hope that this very important committee impresses upon the Joint Finance committee the importance of the 4.1 % increase that is requested to help keep access available to all students. Just as you have to balance a budget, so does MATC. I am concerned that again classes may be cut and access, denied because of enrollment caps. Please know that the state pays \$7,800 per FTE for a UWM Student and \$2,500 a year for a Wisconsin Technical College System Student. The amount of state support has dwindled from 35% of the cost of the Technical College System down to 20% in the last 15 years.

I ,as well as 65,000 other MATC students, are concerned.

Thank you for letting me address you today, and I thank you for your efforts in education. I know that we are in good hands with this committee.

Thank you