

UNIVERSITY OF WISCONSIN SYSTEM  
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## SUMMARY OF UW SYSTEM PRIORITIES FOR FISCAL YEAR 2005

### 1. WISCONSIN MANUFACTURING CONSORTIUM

Manufacturing remains a cornerstone of the Wisconsin economy, representing more than one-third of the state's employment base. This sector provides many of the technical and management positions that provide the above-average wages needed to raise the per capita income of Wisconsin workers to levels comparable to adjacent high-tech states. Early last year, UW System President Katharine Lyall convened the UW System Industrial Outreach Task Force, which seeks federal funding to establish the "Wisconsin Manufacturing Consortium." The statewide consortium would work to (1) promote relevant expertise at each UW campus and (2) establish a new manufacturing enterprise through aggressive development of statewide partnerships.

### 2. ADDRESSING THE HEALTHCARE WORKFORCE CRISIS: A DEMONSTRATION MODEL USING SKILLS GAP ASSESSMENT AND INNOVATIVE DISTRIBUTED LEARNING TECHNOLOGY TO INCREASE THE NURSING WORKFORCE

In September 2002, the Academic ADL Co-Lab, in conjunction with the University of Wisconsin System, Wisconsin Technical College System, Wisconsin Department of Workforce Development and other partners, submitted a grant proposal to the U.S. Department of Labor, Employment and Training Administration. The proposal is built on a collaborative model that uses innovative technology to address a major workforce shortage of registered nurses in Wisconsin.

### 3. ACADEMIC ADVANCED DISTRIBUTED LEARNING CO-LAB

The Academic Advanced Distributed Learning Co-Lab seeks federal funding to develop and assess simulated learning environments for career exploration and academic use related to training front-line public health workers in Outbreak Detection and Initial Response. This project would build upon an unfunded partnership with the Centers for Disease Control (CDC) to create effective standards-based immersive simulations for use in the field of public health. This funding request leverages the Academic Co-Lab infrastructure, UW expertise, the resources of the Wisconsin Technical College System, and the private software community in Wisconsin.

### 4. A BRAIN GAIN STRATEGY FOR WISCONSIN: THE CENTER FOR ADULT ACCESS

The UW System recognizes the importance of increasing adult participation in public higher education in Wisconsin. UW Colleges and UW-Extension are partnering to expand access and efficiencies through the use of online technology and other modalities appropriate to the time- and/or place-bound adult. The Center would expand the opportunity for adult students to pursue the associate degree as a step toward acquiring a baccalaureate degree and provide a robust mechanism for the UW System to better serve adult students. Federal funding would enable a pilot program at one or two sites in Wisconsin, with expansion in the future, which would raise per capita income in Wisconsin by serving a potential 10,000 adult citizens.

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REQUEST FOR FUNDS:  
WISCONSIN MANUFACTURING CONSORTIUM

ORGANIZATION: The University of Wisconsin-Extension, Business and Manufacturing Division, requests \$905,000 for supporting the establishment of a consortium for manufacturing for the state of Wisconsin.

The idea for a statewide Manufacturing Consortium came from the recommendations of the UW Industrial Outreach Task Force, which was formed early last year. The Industrial Outreach Task force believes that the UW System must demonstrate its relevance to the state manufacturing sector, and must develop a strategic plan to coordinate and evaluate university-based economic development efforts for Wisconsin's manufacturers.

DESCRIPTION: The Industrial Outreach Task Force determined that the University of Wisconsin System should establish a statewide consortium (Wisconsin Manufacturing Consortium) to connect technological development at universities to industrial products and processes.

Based on extensive discussions and research, the UW Industrial Outreach Task Force determined that the UW System should pursue two transformative goals:

1. Advance the competitiveness of existing manufacturers by providing new technologies for developing both the products of the future and the advanced enterprise systems/processes required in the global knowledge economy. To accomplish this, the University of Wisconsin system will strengthen marketing, content and delivery of existing and future educational and technology transfer initiatives by working collaboratively on a statewide basis. The statewide consortium will promote efficient use of content experts employed by each UW campus and deployed over a statewide service delivery area. The consortium will:
  - Ensure that time, place and method of instruction for manufacturers are coordinated and marketed cooperatively.
  - Provide for needs assessment, technical assistance and delivery of educational and tech transfer opportunities for manufacturing. A cadre of cluster experts able to provide needs assessment, planning and facilitation will provide educational plans for small- to medium-sized manufacturers as well as large manufacturers.
  - Provide learning modules to demonstrate best practices in manufacturing using quality and continuous improvement methods.
  - Utilize Wisconsin's industry clusters to determine needs, develop solutions and identify R&D opportunities.
  - Provide one-stop access to the University of Wisconsin for all state manufacturers through a central call center.
  - Enable small and medium-sized businesses to utilize the resources and capabilities of the academic institutions.
  - Capitalize on the shared interests of regional academic institutions and the private sector to contribute to the innovation enterprise.

2. Establish the new manufacturing enterprises of the future through aggressive development of statewide partnerships designed to promote an entrepreneurial culture and to create much-needed support programs.
  - Promote and enable innovation by increasing the scientific and technological commercialization through new business startups.
  - Strengthen the capabilities of the academic institutions to contribute to the innovation process through a systems approach.
  - Enable technological innovation through the synergistic development, integration and transfer of new knowledge.
  - Create and validate new generalized models that integrate research and education capacity to create a critical level of manufacturing innovation in the state.

CONTACT: Erica Kauten, 608.263.7794  
Lawrence Casper, 608.265.4105

PAST FUNDING: This is a new program, so it does not have a past funding history.

COSTS: Federal Funding Requested in FY 2005: \$905,000

SIGNIFICANCE: Manufacturing remains a cornerstone of the Wisconsin economy. With 23 percent of the state's workforce engaged directly in manufacturing employment, and more than 10 percent engaged in support functions for the manufacturing sector, manufacturing represents just over one third of the state's employment base. This sector also provides many of the technical and management positions that provide the above average wages needed to raise the per capita income of Wisconsin workers to levels comparable to adjacent high-tech states.

The recent recession has eroded Wisconsin's manufacturing base. Improved manufacturing efficiencies will help to stem this loss in the short term, but in the long term it will be necessary for state manufacturers to enter high value-added markets that are based on advanced technologies and business practices. For neighboring states moving aggressively into such advanced product development and manufacturing, the results have been clear: growth in jobs and per capita income.

Considering our great universities and technical colleges, Wisconsin does not have the rate of technology diffusion or transfer – the creation of practical products, processes and spin-off entrepreneurial ventures – that it should. We must increase our deployment of technology to firms in ways that directly affect their introduction of new products and processes.

University of Wisconsin System President Katharine Lyall convened the UW System Industrial Outreach Task Force early last year to propose recommendations for developing new models and mechanisms for statewide manufacturing transformation and accelerating the pace of support for the industrial sector.

The UW Industrial Outreach Task Force believes that the UW System faces an immediate challenge to demonstrate its relevance to the state manufacturing sector. Governor Doyle has proposed a funding plan for state institutions to develop short-term programs in support of state manufacturing, and it is clear that the Wisconsin Technical College System (WTCS) is positioning itself to not only fulfill its role for manufacturing but to take advantage of this funding as well. The WTCS created a

thoughtful, strategic plan and allocated and re-allocated funds to its manufacturing programs.

The UW System is likewise developing its own unique strategies and tactics to meet the need and prepare for the implementation of the Governor's Grow Wisconsin initiative. Such tactics include the planning, coordination and evaluation of university-based economic development efforts for Wisconsin's manufacturers. The Industrial Outreach Taskforce will serve in such a capacity and work as a catalyst in forging new strategic partnerships and linking university-based resources to the needs of new and existing manufacturing firms.

CONTACTS WITH

CONGRESS: None.

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REQUEST FOR FUNDS:  
ADDRESSING THE HEALTHCARE WORKFORCE CRISIS: A DEMONSTRATION MODEL USING  
SKILLS GAP ASSESSMENT AND INNOVATIVE DISTRIBUTED LEARNING TECHNOLOGY TO  
INCREASE THE NURSING WORKFORCE

ORGANIZATION: The Academic ADL Co-Lab and the University of Wisconsin System request \$4.2 million to address a major workforce shortage of registered nurses in the state of Wisconsin.

DESCRIPTION: We propose developing model partnerships and training tools that more rapidly advance workers into high-demand occupations. This effort, which will be piloted in two areas of Wisconsin, will allow the grant partners to test the effectiveness of these tools and partnerships for ultimate statewide application at the end of the grant period. This initiative will also provide field-tested prototypes to the U.S. Department of Labor for use in other industries and communities around the country to rapidly meet critical training needs.

The proposal is built on a collaborative model that uses innovative technology to address a major workforce shortage of registered nurses in Wisconsin. It will also create career ladder opportunities for entry-level incumbent health care workers and registered nurses who have two-year nursing degrees, but wish to move into jobs with more expanded responsibilities. The partnership for this project will include health care employers, health care business professional associations, local workforce development boards, and the state Council on Workforce Investment with the University of Wisconsin System, the Wisconsin Technical College System, and the Wisconsin Department of Workforce Development.

The goals of the project will be to:

1. Develop a skills assessment tool that will identify and assess the skills and knowledge gaps of targeted groups who will benefit from focused, accelerated programs of study to remain in or enter the field of nursing;
2. Develop standardized educational content modules that will precisely address skills gaps and expedite the educational process for incumbent workers to advance into the field of nursing by completing their associate degree in nursing, and for nurses at the associate degree level who wish to advance along the career ladder by completing their BSN/MSN degree;
3. Use these tools to assist health care employers in developing career ladders for nursing occupations;
4. Disseminate these tools, once tested, statewide to local workforce development boards through Job Centers, in cooperation with health care employers,

Wisconsin Technical Colleges and UW System campuses so that they can be used on an on-going basis to assist in meeting the demand for registered nurses;

5. Provide the U.S. Department of Labor with field-tested prototypes that can be used to expedite skills assessment and training in other industries and occupations; and

6. Develop a model of partnership between educational institutions, the workforce development infrastructure and employers for skills gap assessment and training that will be replicable to other career occupations experiencing labor shortages.

CONTACT: Dr. Sally Lundeen, UW-Milwaukee School of Nursing  
Judy Brown, Academic ADL Co-Lab

PAST FUNDING: This is a new program, so it does not have a past funding history.

COSTS: Federal Funding Requested in FY 2005: \$4,200,000

SIGNIFICANCE: Wisconsin faces a significant challenge in rapidly training new nurses to meet the needs of its health care industry in an era when state funding available to expand nursing program capacity in postsecondary schools is extremely limited. The need to train a workforce to meet the growing demand for nurses in the health care industry is expected to persist and grow between now and 2030. Addressing this demand will require a strong partnership involving the health care industry, government, education and community-based agencies. It will also require the development of technological tools that are effective in providing accessible and expeditiously delivered skill training to incumbent workers who want to move up a career ladder in the health care industry.

CONTACTS WITH

CONGRESS: None. (This proposal has been submitted to the Employment and Training Administration of the U.S. Department of Labor, but has not been acted upon.)

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REQUEST FOR FUNDS:  
ACADEMIC ADVANCED DISTRIBUTED LEARNING CO-LAB

*A proposal to develop game-based immersion simulation prototypes for use in academic instruction, to assess and evaluate their learning effectiveness, and to identify viable design processes and/or formats for the use of such simulations in a variety of learning fields and environments.*

REQUESTED ACTION

The Academic ADL Co-Lab and the University of Wisconsin System request \$1.5 million in funding from the Department of Health & Human Services or another federal agency to develop and assess the production and learning effectiveness of simulated learning environments. The proposal focuses on immersion simulation scenarios for use in training front-line public health workers in Outbreak Detection and Initiative Response.

BACKGROUND

The Academic Advanced Distributed Learning Co-Lab was launched under the leadership of the Office of the Secretary of Defense with the purpose of creating distributed learning environments that permit the interoperability of learning tools, course content and learning systems on a global scale. The national ADL network is comprised of three Co-Labs: the ADL Co-Lab, located in Alexandria, the central organization for guiding, coordinating, and integrating the operations of all ADL Co-Labs; the Joint ADL Co-Lab, located in Orlando, which facilitates the implementation of ADL across the Department of Defense; and the Academic ADL Co-Lab, located in Madison, the focal point for academic applications and study. The Academic ADL Co-Lab is a joint project between the University of Wisconsin System and the Wisconsin Technical College System. Presently, the Academic ADL Co-Lab is working with the Centers for Disease Control (CDC) to investigate possibilities and to identify expertise needed to create effective game- and standards-based immersive simulations for use in the field of public health.

GOALS

Specifically, the Academic ADL Co-Lab seeks funding to:

- Examine the effectiveness of gaming theory and pedagogy and identify additional opportunities for its use in standards-based distributed learning.
- Capitalize on the portability and educational effectiveness of gaming and simulation, which, for the purposes of this project, will be used toward the training of geographically-dispersed public health workers in Outbreak Detection and Initial Response.
- Conduct applied research on the effectiveness of a game-based approach in affecting the collaboration of front-line public health workers in emergency preparedness.
- Capitalize on the social interactivity, context sensitivity, connectivity, and individual learning available through role-based and massive-multiplayer

gaming to engage and immerse the learning in the challenges posed by emergency preparedness.

- Address the need to train public health instructors in how to create game-based training modules to meet other public health educational objectives.

#### SPECIFIC OBJECTIVES

These goals will be accomplished through:

1. Creation of model products and processes for developing standards- and game-based simulations for use in learning environments.
2. Design and assessment of game-based self-instructional training modules on outbreak detection and initial procedural responses for such target audiences as surveillance clerks, infectious disease investigators, epidemiologists, public health nurses, microbiologists, environmental health specialists, and sanitarians.
3. Construction and testing of design tools that can be used to create custom levels and scenarios for game-based learning environments.
4. Sharing of expertise through hands-on training for educators and instructional designers in how to create game-based learning environments (for the purposes of this project) in public health fields.
5. Identification of other areas where immersion environment would facilitate learning.
6. Creation of a standards-based, educational gaming collaborative managed by the Academic ADL Co-Lab and its partners, the Wisconsin Technical College System and the University of Wisconsin System, which will focus on the use of standards in creating games for learning and training.

#### PROJECT BUDGET

The Academic ADL Co-Lab is seeking \$1.5 million in FY05 for this 18 month project. An additional \$500,000 will be matched by the Academic Co-Lab and its partners.

#### TIMELINE

In Phase I, the Academic ADL Co-Lab will: hire the design team; assemble the design, content and instructional development expertise; complete pre-production discussion, design guidelines, coding standards and documentation; and build a working demo. This includes the identification and generation of characters, establishment of a scenario, and development of at least one level of the basic game play and/or simulation needed to create the learning environment. Assessment standards will be established. The team will begin user testing to uncover key unknowns related to navigation, engagement, usability, etc., to establish a basic format that will work with the target audience. Learning content will also be reviewed and the effectiveness of learning assessed.

Phase II will concentrate on building the remainder of the game based upon the refined prototype. This stage of the process will include periodic reviews and deadlines with features added and refined as the work progresses.

In Phase III, the team will continue to refine its products and processes resulting in module product deliverables to the CDC. It is anticipated that the expertise being developed will be captured for re-use or re-configuration to create game-based learning modules for other career-related simulated environments. "Use

cases” will be identified through academic partners, as well as the continuing collaboration of the Department of Defense through the Academic Co-Lab and the CDC. Dissemination of research related to project results and process will be continued through conference presentations and journal articles.

## CONCLUSION

It is estimated that 60 percent of disease outbreaks go undetected worldwide, due, in part, to medical care usage patterns and lack of training and awareness among health care providers and the public. This project would aid the CDC in its attempt to create earlier detection of epidemics, so appropriate actions can be undertaken to limit both the escalation of suspected outbreaks and the resources needed to deal with them.

It is anticipated that, as a by-product of this project, similar game-based learning modules could be designed for use in other areas where immersion environments would facilitate learning, such as:

- Career counseling, e.g., for self-assessment of career interests by middle and high school students and by displaced workers;
- Identification of candidates most likely to succeed in particular emergency services or other career fields; and
- Expedited training in other career fields where immersion training is important, but highly expensive, e.g., because of the need to train dispersed populations.

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REQUEST FOR FUNDS:

A BRAIN GAIN STRATEGY FOR WISCONSIN: THE CENTER FOR ADULT ACCESS

ORGANIZATION: The purpose of the project is to increase adult participation in public higher education in Wisconsin. As the freshman-sophomore general education institution of the UW System, the UW Colleges is well-positioned to provide the transition for adult students into the university system. Currently, approximately 31% of UW Colleges students are aged 22 and older, giving the institution much experience in facilitating this transition and introducing or reintroducing students to higher education. The UW System must also ensure that adult students, particularly those who face time and place barriers, will have the opportunity to achieve the baccalaureate degree upon completion of their first two years at the University.

As a partner with the UW Colleges in the Center for Adult Access, UW-Extension will work with UW baccalaureate degree-granting institutions to develop and support both institution-specific and multi-institutional collaborative baccalaureate degree programs that expand access and realize efficiencies through the use of online technology and other modalities appropriate to the time- and/or place-bound adult. This is consistent with UW-Extension's long-standing responsibility for coordinating statewide credit outreach through the UW degree-granting institutions and its advocacy for adult learners.

DESCRIPTION: The Center would have the following goals:

- To expand the opportunity for adult students to pursue and achieve the associate degree as a step toward acquiring a baccalaureate degree.
- To provide a robust mechanism for the UW System to better serve adult students, particularly those who face time and place barriers to achieving the baccalaureate degree.
- To enhance the responsiveness of adult-oriented programs on UW campuses.
- To provide a mechanism for collaboration with the Wisconsin Technical College System institutions in serving adults who use those institutions as an entry point for pursuing a baccalaureate degree.
- To increase the number of baccalaureate degree holders among Wisconsinites to the national average.

In order to achieve these goals, the Center would engage in the following activities:

- Offer associate degree programming to meet adult needs for higher education at times and in locations convenient to nontraditional students.
- Establish a broad mix of course offerings, including hybrid and online options, designed to meet the needs of place-bound students.
- Develop collaborative programming with the WTCS campuses and UWS institutions.
- Take better advantage of alternative programs aimed at adult students on UW campuses.

- Provide resources on a contractual basis to UWS institutions to deliver their baccalaureate programming at a distance from their campuses.
- Strengthen collaborations between UW campuses and Wisconsin employers to provide educational opportunities to employees.
- Provide resources to the UW Colleges, UW-Extension and other UW institutions to develop selected multi-institutional, consortial, degree programs in fields which meet adult student needs. Such programs would expand the program array within the UW System to better meet the needs of adult students in a cost-effective and collaborative manner.

**TIMETABLE:** The initiative would begin in Fall, 2004, as a pilot program at one to two sites in Wisconsin in which the UW Colleges does not now have a campus. The project would then be expanded to additional sites as dictated by the needs of place-bound adults and community and business needs for workers with university-level education.

**CONTACT:** Margaret Cleek, Provost and Vice Chancellor, UW Colleges, 608.263.1794  
Marv Van Kekerix, Provost and Vice Chancellor, UW-Extension, 608.262.6151

**PAST FUNDING:** The program is a new initiative and has not yet been funded. Planning has taken place, however, for one to two pilot sites in 2004. It is proposed that those pilot programs be funded through the following:

- Re-allocation within the UW Colleges
- Re-allocation within UW-Extension
- Tuition and fees revenue from the program
- Possible re-allocation within UW System matched by additional GPR funding from the state
- External grant funding

**COSTS:** Total Costs in FY 2005: These costs will depend on the number of sites at which programs are offered. The total cost for one site FY 2005 would be \$131,407.

Salaries and Fringes:	\$64,487
Supplies and Expenses:	\$19,285
Equipment:	\$8,000

Funds from Other Sources in FY 2005:	
Reallocation:	\$40,000

Federal Funding Requested in FY 2004: none

**SIGNIFICANCE:** The statistics for 2001 indicate that Wisconsin's per capita income is below the national average (\$29,270 versus the national average of \$30,472) and considerably below per capita incomes in Minnesota (\$33,101) and Illinois (\$33,023). Unfortunately, the trend data indicates that Wisconsin is falling further behind both the US average and the Minnesota per capita income into the future.<sup>1</sup> Clearly, there is a need to create significantly more high-paying employment opportunities within the state's economy. But, if those opportunities were available, is Wisconsin's current workforce adequately prepared to meet the increased demand for education, training and skills required? The statistics here are not encouraging. In 2001, Wisconsin ranked 30<sup>th</sup> among the states in terms of the percentage (24.7%) of the workforce that

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<sup>1</sup> David J. Ward Presentation, "Vision 2020: An Agenda for Change in Wisconsin," NorthStar Economics, Inc., August 4, 2003.

has a 4-year degree. This compares with Minnesota at 8<sup>th</sup> (30.5%) and Illinois at 16<sup>th</sup> (27.3%). In addition, the statistics on net migration of college graduates indicates that between 1989 and 1999, Minnesota experienced a gain of 141,055 persons with a 4-year degree, whereas Wisconsin experienced a net loss of 50,772. In short, not only did Wisconsin rank low in the % of the population with a 4-year degree, it is continuing to fall further behind as more degree-holders move into neighboring states such as Minnesota.<sup>2</sup> The inevitable conclusion is that “Wisconsin has a shortage of knowledge workers.”<sup>3</sup>

How can we significantly increase the percentage of the state’s population with a 4-year degree? One is to increase the numbers of students who enter post-secondary education directly from our secondary schools. The National Center for Public Policy and Higher Education’s report entitled “Measuring Up 2002: The State-by-State Report Card for Higher Education” notes that the proportion of Wisconsin students who go on to college immediately after high school “remains good compared to other states,” and that “a good percentage of young adults (ages 18-24) enroll in college-level education.”<sup>4</sup> It appears that Wisconsin is serving the needs of the traditional student and can be justly proud of a very high access rate

However, the same study notes that “a fairly low proportion of working-age adults (ages 25-49) enroll part-time in education or training beyond high school.” (p. 59). Whereas the authors of the study assign an overall grade of B in participation, they assign the state a D+ for Working-Age, Adult Participation.<sup>5</sup> Our own UW System records indicate that despite the efforts to increase service to non-traditional students, the actual numbers served have been decreasing. In 1991, the total of undergraduate, nontraditional students served was 28,518. By 1999 that number had decreased to 21,060. In a similar vein, the number of nontraditional, graduate students had declined from 19,217 to 16,192. Although there are some indications that not all the nontraditional students are captured by this figure, the trend is very consistent.<sup>6</sup> And, as Dennis Jones, President of the National Council of Higher Education Management Systems, indicated in his recent appearance before the University of Wisconsin Board of Regents, although current access is at about 45%, the fact is that 80% should have some postsecondary education in order to fulfill workforce development needs for now and the future.<sup>7</sup> Clearly, providing access to higher education opportunities for nontraditional students is going to continue to be an issue in the future.

CONTACTS WITH  
CONGRESS: None.

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<sup>2</sup> David J. Ward Presentation, “Vision 2020: An Agenda for Change in Wisconsin,” NorthStar Economics, Inc., August 4, 2003.

<sup>3</sup> “Building the New Wisconsin Economy, Context Paper.” September 16, 2003, p. 12, Complete document @ [www.bnwe.info](http://www.bnwe.info)

<sup>4</sup> The National Center for Public Policy and Higher Education, *Measuring Up 2002: The State-By-State Report Card for Higher Education*, p. 59.

<sup>5</sup> The National Center for Public Policy and Higher Education, *Measuring Up 2002: The State-By-State Report Card for Higher Education*, p. 59; 182.

<sup>6</sup> University of Wisconsin System, *Achieving Excellence: The University of Wisconsin System Accountability Report, 2000-01*, p. 27.

<sup>7</sup> Charting a New Course: Revenue Authority and Other Opportunities Working Group, University of Wisconsin Board of Regents, Meeting Minutes, (September 4, 2003).