

Summary of UW System Priorities for FY 2009

Academic Advanced Distributed Learning Co-Laboratory

- The Academic Advanced Distributed Learning Co-Lab has supported the Department of Defense mission to promote e-learning (information technology interface learning) standards for eight years. With the completion of this initial mission, the Co-lab is now looking at the next emerging trend in learning technology: immersive learning environments, using core technology from video games and simulations to achieve more robust learning environments that have applications in both the defense and civilian sectors. New funding would enable the Co-Lab to create an immersive research and development center by providing support for infrastructure, technical development staff, and competitive post-doctoral and student fellowships/internships.

International Center for Enterprise Studies

- The Center for Entrepreneurship at J.J. Strossmayer University in Osijek was established as the only such program in the Balkan region of Eastern Europe. The Center's graduate program in entrepreneurship has attracted over 250 students from all parts of the former Yugoslavia. The University of Wisconsin institutions enjoy a long and continuing history with the center as its founding partner. Funds will be used to expand the program and provide teaching, technical expertise, curriculum and research expertise, as well as an expanded faculty exchange and new student exchange. Helping to develop this international center will help the Balkan economy and provide our faculty and students an opportunity to change the world one business, one student, one faculty member at a time.

Emerging Technology and Training Centers for Wisconsin

- Madison and Milwaukee have experienced rapid business growth in part due to the technology activities of UW-Madison and UW-Milwaukee and the institutions' basic and applied research and development performance. The remaining 11 UW System campuses have approximately 600 faculty members with technology skills and expertise. Yet, currently this enormous intellectual potential is not utilized for the economic growth of the surrounding regions or training of students in high-paying jobs. A unique industry-UW partnership to engage the faculty and students in solving Wisconsin's industrial challenges, creating sustainable and profitable products and contributing to state-wide economic growth is presented. The UW System respectfully seeks federal funding that will support the development of six emerging technology and training centers in existing buildings connecting several campuses and forging partnerships with regional industries.

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REQUEST FOR PROJECT FUNDING:
ACADEMIC ADVANCED DISTRIBUTED LEARNING CO-LAB

ORGANIZATION: The Academic Advanced Distributed Learning Co-Lab (AADLC) is a non-profit entity within the University of Wisconsin System, located in Madison, Wisconsin, that develops advanced learning technologies in conjunction with faculty and students across the UW System and the Wisconsin Technical College System. Original seed funding came through the Department of Defense to provide training technology transfer to and from the business and academic sectors. The Co-Lab has been very successful in this mission and continues to support DoD objectives through a number of grant and contract projects.

The Co-Lab provides students with hands-on, high-tech experience through research and development partnerships with the U.S. Department of Defense, businesses, and academic institutions. These joint research projects have allowed the AADLC to file two patent applications for technologies with commercial potential. In 2007, the Co-Lab successfully spun off a for-profit business that is now a \$1 million educational company supporting eleven high-tech positions.

DESCRIPTION: The AADLC has supported the DoD mission to promote e-learning (information technology interface learning) standards for eight years. With the completion of this initial mission, the AADLC is now looking at the next emerging trend in learning technology: immersive learning environments (ILE). ILEs utilize core technology from video games and simulations to achieve more robust learning environments that have applications in both the defense and civilian sectors.

The Academic Advanced Distributed Learning Co-Laboratory Immersive Learning Environments Initiative – The AADLC has supported the DoD mission to promote e-learning standards for eight years. The purpose of this work is to develop an information technology platform for the U.S. Defense Department’s online gaming, learning and simulation programs. This standards work is now transitioning to global not-for-profit and for-profit organizations, which demonstrates the success of the original work by the Department of Defense’s Advanced Distributed Learning Initiative (ADLI) and the AADLC. Now that the initial mission goals have been completed, it is time to look at the next emerging trend in learning technology: Immersive Learning Environments (ILE). ILEs utilize core technology from video games and simulations to achieve more robust learning environments. The ADLI has identified game and simulation technology as a key strategic direction over the next ten years. AADLC is seeking new seed funding from Congress to be able to support this mission.

The U.S. DoD has used advanced electronic simulations and instructional computer games to train our war fighters for many years. These tools have been successful in preparing troops to utilize the equipment and tactics required by the military to win the war. Increasingly, however, our troops are being called on to win the peace by exercising sophisticated soft-skills, such as negotiation and cultural sensitivity. Such peace-winning activities are often included under the definition of “non-kinetic” operations. Applying current ILE technology to such tasks is extremely

expensive. Many of these technologies are not well-suited to help with non-kinetic tasks. While a 3-D environment might be needed to fly an F-18, for example, the same technology does not work as well when trying to settle a dispute in a local village. Teaching non-kinetic skills requires learning models and technology that can be rapidly developed and deployed at low cost.

The AADLC would use new funding to create a non-kinetic ILE research and development center as part of the new ADLI strategic plan. The center will use funding to support three key start-up initiatives: infrastructure within the AADLC (digital development studio, computer workstations, and server technology), technical development staff, and competitive post-doctoral and student fellowships/internships.

The non-kinetic ILE research and development center fellowship program will be a subset of AADLC R&D efforts and include the Games, Learning, and Society Faculty at the University of Wisconsin-Madison. Additionally, the AADLC will extend its partnership with WiSys Technology Foundation, the University of Wisconsin System intellectual property management organization, to ensure any created technologies are positioned to build a self-sustaining operation.

The original \$1 million DoD investment in the AADLC in 2003 yielded more than \$6.5 million in new research grant funding to the state, at least \$4 million in additional economic impact (through conferences, contract R&D, and other project work), and provided more than 40 graduate, undergraduate, and technical college students outstanding high-tech work experience. This new funding would significantly improve this return on investment by creating new sustainable economic development for the region.

TIMELINE: This project will commence upon receipt of funds and funds will be used in FY09.

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PAST FUNDING: The Co-Lab was successfully launched and has subsequently been expanded using \$1 million in targeted FY2003 Defense Appropriations funds. Funding was included in the Conference report to accompany H.R. 5010, Defense Appropriations for FY2003 (House Report 107-732), in the Joint Service Education and Training Systems Development (line #80, Systems Development).

Projects incubated by AADLC have attracted private capital investments for commercial off the shelf products. AADLC requires seed funding for implementing

the ILE program. There are no competitive grants that we are aware of that would fund this initial investment.

AADLC is capable of providing a match for the Immersive Learning Environment Initiative. The match would come from a combination of equipment and technology that will be dedicated to this program should federal funding be made available in FY2009.

BUDGET:	\$100,000	Technology and infrastructure upgrade
	\$ 75,000	Business Support Specialist
	\$ 50,000	Intellectual property management
	\$225,000	Three post-doctoral/research fellowships
	\$120,000	Two graduate student fellowships
	\$ 80,000	Four undergraduate/technical college internships
	\$650,000	Total FY09 Funding Request

SIGNIFICANCE: The Academic Advanced Distributed Learning Co-Lab has supported the DoD mission to promote e-learning standards for eight years. The purpose of this work was to develop an information technology platform for the U.S. Department of Defense's online gaming, learning and simulations programs. This standards work is now transitioning to global not-for-profit and for-profit organizations, which demonstrates the success of the original work by the Department of Defense's Advanced Distributed Learning Initiative and the AADLC. Now that the initial mission goals have been completed, it is time to look at the next emerging trend in learning technology: Immersive Learning Environments. The ADLI has identified game and simulation technology as a key strategic direction over the next ten years.

CONTACTS WITH
CONGRESS:

Senator Kohl will be asked to submit this request in the U.S. Senate.
Congresswoman Baldwin will be asked to submit this request in the U.S. House.

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REQUEST FOR PROJECT FUNDING:
INTERNATIONAL CENTER FOR ENTERPRISE STUDIES

ORGANIZATION: The University of Wisconsin-Whitewater is a public four-year institution of higher education that offers 46 undergraduate, 13 masters degrees and one educational specialist degree with an enrollment of approximately 11,000 students. The University of Wisconsin–Madison is a public, land-grant institution that offers a complete spectrum of studies through 13 schools and colleges. With more than 41,000 students from every U.S. state and 134 countries, UW–Madison is the flagship campus of Wisconsin’s state university system. UW–Madison is a formidable research engine, ranking among the top U.S. research universities for total research and development expenditures. Faculty, staff, and students are motivated by a tradition known as the “Wisconsin Idea” — that the boundaries of the university are the boundaries of the state and beyond.

DESCRIPTION: This funding will be used to foster an exchange of teaching, technical expertise, curriculum and research expertise as well as a faculty and student exchange. The opportunities for international exchange are many, but few areas need the exchange, nor provide such a rich opportunity for cultural understanding and impact as the Balkans. Helping to develop this international center will not only help the Balkan economy but give our faculty and students an opportunity to change the world, one business, one student, one faculty member at a time.

The Center for Entrepreneurship at J.J. Strossmayer University in Osijek Croatia was established in 2000 and is the only such program in the Balkan region of Eastern Europe. Since the inception, the Center’s graduate program in entrepreneurship has attracted over 350 students from all parts of the former Yugoslavia, and in 2006 launched an undergraduate degree in entrepreneurship. The University of Wisconsin helped establish a Small Business Development Center in 1997 and has continued to develop subsequent programs with Strossmayer.

Supported by an international advisory board, consisting and led by the University of Wisconsin, the Center seeks support to grow into an autonomous International Center for Entrepreneurial Studies (ICES). This grant will provide teaching, technical, curriculum and research expertise, as well as an expanded faculty exchange and new student exchange.

The newly-expanded ICES will provide convenient and affordable distance-learning courses to students throughout the Balkans, as well as condensed programs for existing entrepreneurs. Outside the classroom, the Center will mentor nascent businesses in its Business Incubator.

The Wisconsin Innovation Service Center at the University of Wisconsin-Whitewater will use its significant expertise in innovation assessment and new product development to support a focus on the creation of high impact, economic growth businesses. WISC's mission is to help aspiring entrepreneurs, innovative manufacturers and independent inventors make profitable new product and market decisions. WISC has conducted over 6500 research projects, including exploratory new product assessments, licensing partner searches, competitor intelligence reports, distributor assessments, and customer satisfaction analyses, for both new ventures and established companies. WISC staff has provided training on early-stage assessments to a national audience and this grant would give them international experience.

The Western Balkan region continues to face enormous socio-economic and political challenges as a result of the 1991-1995 war that destroyed the regional business infrastructure. Unemployment is rampant, the small and medium enterprise (SME) sector is slow to recover and the process of national reconciliation has stalled. International surveys, such as those by the World Economic Forum and the Global Entrepreneurship Monitor, identify low competitiveness, lack of innovation and the absence of an entrepreneurial culture as the most significant obstacles to regional growth. The University of Wisconsin has been at the forefront of the Center for Entrepreneurship's efforts to help alleviate these problems, providing a model for the Center to follow in the development of its graduate entrepreneurship program and its small business outreach program. This initiative will also integrate the unique strengths of the UW-System with the Balkans. This relationship benefits the University of Wisconsin as well, allowing greater cultural understanding through faculty exchange, as well as new and more varied curriculum development and research tools, and expanding this relationship for the benefit of both institutions.

TIMELINE: Funds will be expended upon receipt and used in FY09.

CONTACT: Joint submission -- UW-Whitewater and UW-Madison

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PAST FUNDING:

Government of Croatia:	\$350,000 (Is currently before the Croatian Government)
EU – Tempus	\$500,000 (Received an initial grant of \$50,000 and have submitted for a second round)
Private Fundraising	\$150,000 to date

BUDGET: Costs in FY 2009:

Operational Costs:	\$ 500,000
Development Costs:	\$1,350,000
<i>(undergraduate program, executive program, doctoral program, entrepreneurship resource library, technology, and entrepreneurship clubs)</i>	

<u>Total Costs in FY 2009</u>	<u>\$1,850,000</u>
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Funds from Other Sources in FY 2009:

Fees:	\$150,000
Government of Croatia:	\$350,000
EU – Tempus	\$500,000
Private Support:	\$100,000

<u>Total from Other Sources:</u>	<u>\$1,100,000</u>
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<u>Federal Funding Requested in FY 2009</u>	<u>\$750,000</u>
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SIGNIFICANCE: The opportunities for international exchange are many, but few areas need the exchange, nor provide such a rich opportunity for cultural understanding and impact as the Balkans. Helping to develop this international center will not only help the Balkan economy but give our faculty and students an opportunity to change the world, one business, one student, one faculty member at a time.

CONTACTS WITH

CONGRESS:

This request is being submitted to U.S. Senator Kohl.

This request is also being submitted to U.S. Congresswoman Tammy Baldwin.

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REQUEST FOR PROJECT FUNDING:
EMERGING TECHNOLOGY AND TRAINING CENTERS

ORGANIZATION: Dane County has experienced rapid business growth largely in part due to research discoveries made at UW-Madison. The remaining UW System campuses and Marshfield Clinic have approximately 600 faculty members with technology skills and expertise. This enormous intellectual potential can – and should be – utilized for economic growth of the surrounding regions, training students in high-paying jobs, and creating new energy solutions. A unique industry-UW partnership to engage the faculty and students in solving Wisconsin’s industrial challenges – especially that of saving energy – ensuring the flow of scientific ideas and technological innovation from our institutions, creating sustainable and profitable products and contributing to state-wide economic growth and national economic competitiveness is presented. UW System will develop six emerging technology and training centers (in existing buildings) through clustering faculty expertise and connecting several campuses, and forging partnerships with regional industries.

DESCRIPTION: The six Emerging Technology and Training Centers envisioned are: 1) a Furniture Technology Center at UW-Stout, supported by Ashley Furniture Industry Inc., UW-Stevens Point, UW-Oshkosh, UW-Eau Claire and the Academic Advanced Distributed Learning Co-Lab in Madison to create sustainable materials and improve energy efficiency for Wisconsin’s furniture industry -- the largest in North America; 2) a Tissue and Cell Innovation Center at UW-River Falls to discover innovative ways to treat cancer and conduct immunotherapy. The Tissue Center will have collaborations with UW-Stout, UW-Madison, and Marshfield Clinic; 3) a Nanotechnology Center at UW-Platteville to harness the nanotechnology expertise of UW-Platteville, UW-Madison, UW-Oshkosh, UW-Stevens Point, and U.S. Forest Products Lab to create semiconductor, space and renewable energy applications of nanomaterials; 4) a Drug Design Center at UW-La Crosse to develop novel therapeutic molecules based on natural compounds found in American Indian medicinal plants and mushrooms in partnership with UW-Eau Claire, UW-River Falls, Marshfield Clinic, Gundersen Lutheran Clinic and UW-Milwaukee; 5) a Medical Device Center at Marshfield Clinic in collaboration with UW-Milwaukee, UW-Platteville, and UW-Madison to capture the experience of physicians and surgeons at Marshfield Clinic and the design expertise of UW to create functional medical devices to assist our war veterans and elderly patients; and 6) Center for Advanced Energy Storage Devices at UW-Oshkosh to create innovative applications of nanomaterials in batteries, super capacitors, and fuel cells with the goal of substantially improving performance, safety and lifespan of these devices. These devices are used in industry in addition to homeland security and defense. The Center will collaborate with UW-Eau Claire, UW-Madison, UW-Platteville, UW-Stevens Point and UW Milwaukee. Each of the centers will be supported and partnered with local industries.

TIMELINE: The Furniture Center at UW-Stout will be operational in 2008 with major match funding from Ashley Furniture, Inc. Funding is requested for Fiscal Year 2009 to support research personnel and equipment. The Tissue and Cell Center at UW-

River Falls will be operational in 2009. Funding is requested for Fiscal Year 2009 to support research personnel and equipment. The Nanotechnology Center at UW-Platteville, Medical Device Center at Marshfield Clinic, and Drug Design Center at UW-La Crosse and Center for Advanced Energy Storage Devices at UW-Oshkosh are expected to be operational in 2009. Funding is requested to initiate research and acquire equipment.

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PAST FUNDING:

BUDGET: Costs in FY 2009
1) Salary and R&D supplies for six Post
 Doctoral Associates (\$70,000 one for each Center) \$420,000
2) Total research equipment funds six centers (\$96,000 per center) \$580,000

Each Center will hire a full-time dedicated Post Doctoral Associate to conduct research and development under the guidance of faculty members. Expected development cost of each Center is \$3 to \$5 million over 5 years. The federal fund will be matched (1:3 or 1:5) by private and state funds. Each center will be allocated a total of \$96,000 for equipment purchase. Funds will not be used for building purposes.

Total Federal funding requested in FY 2009 \$1,000,000

SIGNIFICANCE: Each of these Centers will become a nucleus for intellectual creativity of faculty and students from several associated campuses and for local industries to develop innovative products and solutions for industry. Each Center will be funded through industry support and state and federal sources, as well as private foundations and individual contributions for the first 5 years, after which they will become self-sustainable. UW tech transfer organizations will assist in moving these discoveries to the market place to create a revenue stream. Because of the partnership with industry, the Centers will focus only on technologies and products that are marketable. Students and faculty associated with these Centers will be trained in business development and entrepreneurship to become a knowledgeable workforce or start businesses. Thus, this unique industry-UW partnership will have substantial positive impact on the growth of Wisconsin economy and will become a model for future industry-university partnerships.

Through the development of Emerging Technology and Training Centers across regions of Wisconsin, and utilizing the vast expertise of the UW System and industry, this investment will meet the goals of the U.S. Department of Energy's Office of Science to:

- Build partnerships between industry and university and foster collaborative solutions to complex scientific and technological challenges pertinent to industry;
- Focus on new, creative energy solutions and technologies;
- Prepare students for the knowledge-based economy;
- Advance products, solutions and technologies with immediate applications in the marketplace; and
- Employ underutilized intellectual potential of the state for broad economic growth.

CONTACTS WITH
CONGRESS:

None to date.