

University of Wisconsin- Madison

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The Impact of the Kauffman Campuses Initiative at the University of Wisconsin-Madison 2007-2012

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The University of Wisconsin – Madison has a long and stellar history of entrepreneurship on campus and beyond. For the past two decades, UW-Madison has been a pioneer in entrepreneurship education, outreach and research. Since the Wisconsin School of Business first offered an undergraduate course in small business management in 1982, an ever-growing stream of students from all over campus and around the world has been trained to innovate, write business plans, and pursue entrepreneurial dreams. In addition, hundreds of existing businesses have been assisted on the road to reaching their full potential. Finally, the university boasts a cadre of leading scholars that has been assembled over the years for the purpose of investigating the process of entrepreneurship.

But UW-Madison’s embrace of entrepreneurial thinking goes back much further, to the creation of the Wisconsin Alumni Research Foundation (WARF), a separate legal entity that was established eighty six years ago to manage technology transfer for the benefit of the university and society. In its 2010 annual report, WARF reported that it “has processed 6,000 discoveries from UW-Madison inventors, obtained 1,900 patents on these innovations, and completed more than 1,600 licensing arrangements with companies all over the world.” In recent years, WARF has become an active partner with a wide range of start-ups and other private ventures aimed at creating value through innovation. In its longstanding support for UW-Madison research efforts, it has supported the entrepreneurial initiatives of UW-Madison professors and staff to create value through scientific inquiry and to help their intellectual property develop into commercial applications.

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WARF's entrepreneurial success owes in large part to that fact that UW-Madison is an international leader in winning extramural research competitions through path-breaking research in a vast array of scientific domains. Almost every year, UW-Madison is among the top five US universities in the receipt of extramural research funds and is frequently the leading public research university in this regard. That is an amazing accomplishment for a university located in a state with a moderately-sized population with moderate wealth. At the heart of this success are, literally, thousands of UW-Madison professors, research scientists, and graduate students who, in their own entrepreneurial way and on a long-term basis deliver the research discoveries and the promises of new ones that help to generate over \$1 billion annually in research expenditures from federal government sources, foundations, private companies, and other institutions seeking to advance knowledge and technology through the sponsorship of public research.

This serves to highlight a fundamental point that frames this essay regarding the impacts of the Kauffman Campuses Initiative (KCI) grant on our campus: the scale of entrepreneurial activity that is reflected in a \$1 billion per year research enterprise, and \$2+ billion per year campus budget, versus the approximately \$3 million grant provided by the KCI over 5 years. As one faculty member put it, the \$600,000 per year average of the KCI grant was the equivalent of one significant but not relatively large grant that a lab might receive for an individual project, and amounted to less than 0.1% of the university's annual research budget. Even much larger grants like the five year, \$125 million bioenergy grant UW-Madison received from the Department of Energy in 2008 only sent notable ripples through the research enterprise of two of the campus' thirteen colleges. It is unlikely that most faculty members in other colleges would know much if anything about that DOE grant, even though it leveraged the construction of a new building and state support to hire 8 new faculty members.

By contrast, however, the KCI grant, although small in relative terms, had a broad and deep impact across much of the campus and beyond. As you will read later in this essay, the KCI related initiatives to foster awareness of and access to entrepreneurship had meaningful engagement from no less than eight schools, colleges and units on the UW-Madison campus, in addition to touching the broader entrepreneurial ecosystem in Madison and several other colleges and universities around Wisconsin. And while the already high level of entrepreneurship occurring within the research domain means that our expectations regarding how the KCI grant would transform faculty culture were not as high as they might have been somewhere else with a less vigorous and less decentralized entrepreneurial tradition, we have been successful in cultivating an entrepreneurial culture in ways that deepened activities in some campus neighborhoods and broadened them to others where the culture was not as rich.

There is another substantive contextual point that should be made. *The University of Wisconsin – Madison is currently in the midst of an episodic era of institutional change that has been*

propelled by the fiscal crisis that is pulsing through public universities across the country.

While we will not dwell here on the negative impacts of declining state general purpose revenue funds, combined with a relatively low state-mandated tuition level, the resulting reductions in these funds (which provide the foundation for the core educational mission of the university) have left us seeking to find fundamentally new ways to innovate on the cost and revenue side to sustain the competitiveness of our institution.

To that end, there have been three major campus discussions and initiatives since 2009 that reflect this drive toward institutional reform, and all three involve expanding our institutional commitment to entrepreneurship at deep levels across the campus. We will mention each briefly, and then connect them back explicitly to the Kauffman Campuses Initiative.

First is the reorganization of the administration of the research enterprise. The previous Chancellor, Biddy Martin, initiated this in the 2009-2010 academic year and, with the substantive input of the Faculty Senate as part of the shared governance system, began implementing it last year. While this initiative and subsequent campus discussion have been multi-layered, two relevant and major outcomes it sought were to improve the agility of the university in terms of:

- a) competing more effectively in the emerging “Big Research Grant” arena (given that federal government agencies are increasingly inclined to support fewer, larger, consortium grants on cross-cutting themes), and
- b) moving more research innovations from Discovery to Product, an effort that expands on WARF’s already strong technology commercialization capabilities and track record by using a variety of means ranging from more efficient and efficacious industry contracting to more emphasis on developing faculty/staff/student-run ventures.

In other words, improving UW-Madison’s already considerable entrepreneurial capacities in competitive extramural research and taking research breakthroughs to market were two core goals of this reorganization initiative. Neither of those gave rise to much controversy in terms of basic objectives, and they are moving forward as broadly accepted goals of an increasingly entrepreneurial university. These directions would not have been as readily adopted a decade ago as they were in the past two years.

The second initiative was last year’s greatly debated initiative by the Wisconsin governor and Chancellor Martin to secure Public Authority status for the University of Wisconsin-Madison. This initiative, to separate UW-Madison from the University of Wisconsin System and reduce state government control, at its core, consisted of a push for a dramatic increase in the capacity of the university to operate as an independent public institution with more flexibility to pursue entrepreneurial and business-like practices, which would have included the right to generate ‘profits’, save them, invest them, and pursue further opportunities for institutional advancement

on a variety of fronts. Though the Public Authority legislation was removed from the 2011-2013 State Budget Bill prior to being approved by the Legislature, many of these ‘flexibilities’ (as they have come to be known) were ultimately granted to the university, including the right to move funds around more freely from a ‘block grant’ state allocation, to retain savings over fiscal years, and to propose supplemental pay plans (beyond what the state offers the rest of its workers). In addition, UW-Madison was granted the right to design its own HR system to reflect the unique characteristics of scholarly pursuits, especially among its academic staff, and the types of career ladders, incentives, and development opportunities we need to offer to retain the highest quality scientific personnel for our enterprise. Clearly the legal, institutional and governance environment of the campus shifted dramatically as well in 2011, in a direction that permits us to deepen our entrepreneurial activities on a variety of fronts. This brings us to the present and final example of how we are expanding our institutional commitment to entrepreneurship.

UW-Madison is now involved in a campus-wide period of innovation, aimed at rethinking the way in which we organize ourselves administratively and academically at all levels. These are reflected in initiatives we are calling Administrative Excellence and Educational Innovation. Much of what we are doing in both arenas is entrepreneurial in nature, as we seek to find new ways to generate higher net revenues from our educational, research, and outreach activities while also improving the quality of our services in those arenas. At all levels of the campus, we are in the process of pursuing organizational, curricular, and program innovations that can improve our performance and capacity to generate and compete for resources and attract and retain top caliber personnel. It is early in this process of major institutional reform, so no promises can be made that we will be successful or that change will occur rapidly in an institution which is decentralized and inertial in its patterns of change. But, what is clear at this stage is that the concept of becoming more entrepreneurial is widely accepted in both the educational and administrative arenas, and the notion of an entrepreneurial university at all levels of operation is becoming a basic part of our campus culture. While some of that is driven by the necessity to respond to our deep structural fiscal crisis, some of the acceptance and, indeed embrace, of entrepreneurialism can be credited to the broadening of entrepreneurship education and scholarship across campus neighborhoods where the concept and mindset were not so readily accepted five years ago.

It is in this context of rapid change in our legislative, financial, and institutional culture that we provide a more specific evaluation of the impact of the KCI on UW-Madison based on questions posed by the Ewing Marion Kauffman Foundation. Our main conclusion is that the KCI effort, although not directly touching every student, has nonetheless played a significant role in helping to broaden and deepen the campus’ understanding and acceptance of entrepreneurial spirit, and how it plays a fundamental role not only in the creation of new ventures but in all aspects of what we do in a large, multi-billion dollar academic enterprise.

THE UW-MADISON APPROACH

At the outset of the KCI program we took the position that entrepreneurship was a set of behaviors rather than a discipline for study such as geology or economics. As such, the UW-Madison approach has sought to complement coursework with opportunities for students to learn by doing. To maximize the number of students who might seek out entrepreneurial experiences, we structured our program around the idea that entrepreneurial behaviors could be applied across several areas - not just in business but in social and environmental endeavors, in the arts and in science. At a cultural level, this aspect of the KCI grant helped to increase the understanding that entrepreneurship is about creating value through effective execution and follow-through rather than only about organizing business ventures for profit. The concept also has application in arenas where the risks taken and the value created through innovation can include better provision of services, stronger communities, healthier people, more creative artistic expression, and other outcomes that improve people's well-being. This broader understanding is reflected in the broad adoption of entrepreneurship themes into distinct neighborhoods around campus, discussed more fully below, where previously it might have been seen as somewhat antithetical to their priorities.

ACCOMPLISHMENTS

The Kauffman Campuses Initiative gave rise to several major new entrepreneurship activities on and off campus, and by doing so influenced the way students learn to incorporate entrepreneurship into their thinking and learning. Here are some leading examples:

- The Entrepreneurial Residential Learning Community (ERLC). One floor of our Sellery residence hall is occupied by 64 students who learn how to put their ideas into action through the entrepreneurial process. The ERLC consists mostly of freshmen with intended majors ranging from art history to business to chemistry to engineering to music to political science and beyond. Their main activities include: a 3-credit first semester course on entrepreneurship; monthly dinners with prominent business leaders and faculty involved in entrepreneurship; field trips that include visits to incubators and young entrepreneurial companies; potential funding for student ventures; networking and leadership training. ERLC is in its fifth year and is a permanent fixture in residential options offered to UW-Madison undergraduates as part of the campus' growing emphasis on learning centers in the residence halls. In addition, largely based on the success of the ERLC, University Housing will establish another floor of Sellery Hall in the Fall of 2012 as The Creative Arts and Design Community that will cater to students "with a common purpose of innovation and discovery driven by the creative impulse." These students will gain valuable experiences by participating in ongoing seminars and special projects related to entrepreneurship, self-marketing through multimedia, etc., and the proximal location will enable students of both communities to exchange ideas and work together in the creation of new ventures.

- New entrepreneurship courses and programs in colleges that previously did not offer them. From the outset, the KCI leadership at UW-Madison recognized that access to entrepreneurship courses and competition opportunities had been limited mostly to business school students and some engineering/computer science students. Under KCI, the development of courses, workshops, and other programs was primarily targeted at new audiences in other campus units, including the College of Agricultural and Life Sciences (CALS), the School of Human Ecology, Art Departments (with leadership from the School of Music), and course offerings to the cross-section of students affiliated with the entrepreneurship residential learning community. Perhaps the largest and most successful example of this is the Entrepreneurship in Society course taught in the School of Human Ecology. It has become one of the School's most popular courses with enrollments of approximately 130 students per semester. With the Spring semester 2012, this course will have been offered eight times and features prominent speakers representing four sectors: business, social /nonprofit, arts and humanities and the public sector. Speakers discuss entrepreneurial efforts in each of the sectors while relating practical and innovative examples within their organizations and communities. Lectures are often included as part of the broadcasts through Wisconsin Public Television – University Channel and are available to viewers across the state. They also provide a trove of material for students from year-to-year as they develop their own entrepreneurship projects and ideas. Counting the students expected to be enrolled in the coming Spring semester, more than 1,000 students will have taken this course by June 2012.

A second example is the course “Arts Enterprise: Art as Business as Art,” which is offered by School of Music Professor Stephanie Jutt, in conjunction with Andrew Taylor who runs the Bolz Center for Arts Administration within the Wisconsin School of Business. Prior to the KCI program, nothing like this existed on this campus. Students in the arts learned about developing their artistic skills but not about how to manage or market them. The Bolz Center only incidentally serves artists – it focuses on equipping students of management with the tools to better manage an arts organization. This course, and several associated weekend conferences with similar title and emphasis, encourages students of the arts from across campus, and from a variety of creative majors, to explore unique contexts and challenges of creative careers, with an emphasis on venture creation and collaborative projects with artistic or expressive intent. It also helps students to understand the nature and structure of arts enterprise – for-profit, nonprofit, and in between – while cultivating their own career and creative project goals.

Most recently, the School of Business has developed three campus-wide entrepreneurship certificates that were first announced in early 2011. The Undergraduate Certificate is ideal for students excited about entrepreneurship - whether they intend to launch their own company, work for a young venture, or pilot a new initiative embedded in an existing

organization. The Graduate Certificate focuses on imagining and bringing to life new enterprises, finding start-up investment, and managing their growth and exit events, while the Graduate Certificate in Strategic Innovation is expressly for graduate students anticipating working on existing firms' innovative projects. As of December 2011, 15 students have completed the necessary requirements and been awarded one of the certificates. An additional 77 undergraduate and 34 graduate students have both expressed intention to earn one of these certificates and are enrolled in courses meeting the certificate requirements. Of these 111 students, 91 are outside the School of Business. Majors represented by students seeking these certificates include biology, communication arts, history, international studies, interior design, political science and many more. Interestingly, at the time the certificates were announced the School of Business estimated enrollment would stabilize at 125 students per year, yet in this first year 136 students have either received certificate awards or are on track to earn a certificate.

- Opportunities for experiential learning through establishment of formal programs such as the Law and Entrepreneurship Clinic. This program, which was first put forward as part of the university's KCI proposal but for which no KCI funds have been used, provides valuable experience for law students in all aspects of law that touch on issues facing new ventures. The student attorneys serve as associates in a virtual law firm and thus gain not only practical experience in legal issues but also first-hand insight into what it is like to work in a private practice firm. However, the benefit to the student attorneys is only half of the value generated by the Law and Entrepreneurship Clinic. A steady stream of entrepreneurs have come to the clinic from diverse industry sectors as well as from the non-profit sector seeking assistance on a broad range of legal issues from incorporation advice, to intellectual property, to employee contracts, to regulatory matters and terms of service documentation. Since its inception in 2009 to September 30, 2011, the clinic has closed 106 client files and was working with 65 active clients. The number of student attorneys grew from 8 in the Fall of 2009 to 15 in Fall of 2010 to 22 in Fall of 2011. During the Fall 2011 semester just completed, student attorneys collectively logged 2,310 hours of client service.

Similarly the UW-Madison Student Business Incubator (SBI), which opened in January of 2009, has been host to 20 student-led tenant companies in its 2500 square feet of space in the new Student Services Tower. The SBI is a student organization housed in part of the space allocated to Associated Students of Madison (ASM) on the third and fourth floors of the Tower. The very existence of the SBI is testimony to the breadth of broad student interest in entrepreneurship as the governing board of ASM voted to allocate significant space to the SBI even while many of the more than 700 student organizations at UW-Madison seek workspace within the Student Services Tower. Some SBI-incubated companies have gone on to become businesses in the Madison area, but the major benefit that SBI tenants have gained is the first hand learning experience in building a business. Although the SBI receives

no funding from the KCI grant, KCI leaders at UW-Madison assisted in negotiations between student leaders and the university administration when space in the new building was being allocated, and have served on the Board of Advisors since its inception.

Additionally the menu of entrepreneurial and innovative contests and challenges that occur outside of class, and which involve substantial initiative, risk-taking, and value creation efforts, has broadened considerably with the help of the KCI. The Office of Corporate Relations has created two new competitions designed to encourage student entrepreneurial behavior – the Wiscontrepneur 100 Hour Challenge (where students are given 100 hours to create a product with artistic, environmental or business value using just 15 dollars' worth of surplus materials) and the new Wiscontrepneur Whiteboard Challenge (where students have five minutes and the use of a whiteboard to present innovative technology concepts, novel solutions to known problems, new business propositions, or other unique ideas to a panel of judges). The office has also cooperated with two local community organizations, Madison Magnet (a young professionals' organization with an entrepreneurship committee) and Capitol Entrepreneurs (a networking organization of young Madison area entrepreneurial CEOs) to host annual Wiscontrepneur Deli's. These fun student events incorporate elements of speed dating in a food court metaphor to acquaint students with successful student entrepreneurs organized around topics that frequently confront and confound new entrepreneurs. Other new competitions that promote innovation and entrepreneurial thinking include the Qualcomm Wireless Innovation Prize (hosted by the College of Engineering), which invites students to develop new wireless technology products and marry those ideas with tangible, market-ready business plans, and the Global Stewards Sustainability Prize (sponsored by the UW-Madison Center for Sustainability and the Global Environment) which challenges students to help solve sustainability issues through innovation and entrepreneurship. Three existing competitions, the Burrill Business Plan competition (hosted by the School of Business), the Schoofs Prize for Creativity and the Tong Prototype Prize (both hosted by Engineering) have also seen increased participation since the start of the KCI at UW-Madison. In all, these various challenges and competitions have attracted several thousand students over the five years of the KCI grant.

Of particular note the Burrill Business Plan Competition, now in its 12th year, substantially broadened its scope as a result of the KCI program. The competition originally focused on technology businesses and required participation by at least one business student and one student from the sciences or engineering. With a rule change in 2008, the competition was broadened to allow any UW-Madison student to participate with a business plan entry for any type of enterprise. The resulting change in participation has been dramatic: For the period 2008 – 2011 the number of students participating increased 61%, and the number of teams entering the competition increased by 120%. Of perhaps greater significance is the diversity

of students choosing to participate: In 2011 students came from 26 major study areas ranging from philosophy to computer science.

- The Entrepreneurs' Resource Clinic (ERC). Located on the main floor of the new Wisconsin Institutes for Discovery building that opened in December 2010, the ERC is a "one-stop shop" where entrepreneurs and potential entrepreneurs can find assistance in a single space. UW–Madison entities from across the campus (including WARF, the Office of Corporate Relations, the Law & Entrepreneurship Clinic, the Wisconsin School of Business, the Wisconsin Entrepreneurs Network and the Physical Sciences Laboratory) staff the clinic on a regular basis to coordinate services and resources such as legal advice, technology licensing, business development ideas, financial and budgeting advice, leadership mentoring and communications consulting. The ERC is becoming the center of gravity for entrepreneurs from campus and, to a lesser degree, from the greater Madison community. An online form is available for entrepreneurs wishing to secure assistance from the clinic, and each month the clinic partners conduct a full day triage session to meet with those that have applied during the prior 30 days. The current rate of applications is averaging approximately 12 per month. Upon completion of the triage interviews, applicants are either accepted as new clients or referred to other resources. Because of the strong interest by entrepreneurs in the availability of free legal assistance, the Law and Entrepreneurship Clinic has effectively become the 'anchor' of the ERC, drawing in many entrepreneurs who would have been unlikely to surface for assistance before the advent of the KCI program.

Perhaps as important as all the new programs that have been created, the KCI also brought a campus-wide focus and awareness to existing entrepreneurship programs that were scattered across campus and often isolated in their operation. In fact, the advent of KCI allowed many of the programs to develop substantive links into other campus neighborhoods through the increased level of coordination we achieved. At the outset of this grant we formed a campus-wide committee, chaired by the university's chancellor, which was charged with providing overall management guidance and support for the KCI grant. In fact, from the beginning the committee did much more than supervise the grant: It became a venue where the leadership of all of the entrepreneurship-related entities from across the campus could meet on a regular basis, hear updates on their respective programs, exchange ideas and create new student entrepreneurial learning opportunities. As a result, over time a more holistic understanding and approach has evolved as to how the campus understands the importance of entrepreneurship and how the individual campus units can better leverage each other to make entrepreneurship a more recognizable part of the campus experience among faculty, staff and students. Participation on this committee also enables and encourages leaders of the disparate efforts across campus to compare notes and coordinate their respective activities (e.g., sponsorship of events and design of curriculum). This improves the educational content of the programming, while stimulating participation of students from diverse backgrounds in events that they otherwise would likely not participate in – or even know about.

This latter point is a subtle but critical one. UW-Madison is a very large and diverse university, made up of literally hundreds of neighborhoods, which often do not interact on a regular basis and thus miss out on the gains from exchange of ideas and innovations. The KCI has helped us to bridge neighborhoods because of the cross-campus organizational scope we have adopted. This allowed the entrepreneurship initiatives related to the KCI to be much more effective than they would have been without the coordination and sharing of ideas, contacts, and materials.

One example of this is a one week intensive summertime course called the “Wisconsin Entrepreneurial Bootcamp” (WEB), a joint venture of the Weinert Center for Entrepreneurship at the Wisconsin School of Business and the cross-campus Initiative for Studies in Transformational Entrepreneurship (INSITE). WARF is also an active participant in WEB program planning and delivery. Now approaching its sixth year, this bootcamp has vastly changed the way our graduate students as well as their faculty advisors see entrepreneurship. The WEB is not structured as a typical “bootcamp” where entrepreneurs learn how to better organize their stories and pitch more effectively for investor funding. Rather, the WEB aims to equip non-entrepreneurs (in this case graduate students from the physical and life sciences, law and engineering, and elsewhere) with the ability to learn basic concepts and tools to imagine and assess product ideas, form and fund a technology-based startup, and understand and use financial analysis. Participation both by scientist/entrepreneurs as program faculty and graduate students as attendees has been enhanced directly by the sharing of information and ideas among KCI committee members and indirectly by the buzz created from the overall KCI campus efforts.

Finally, the KCI introduced a number of ways in which students were helped to link experiential learning opportunities with classroom academics. This is a primary mission of the Wiscontrepreneur Program, which is both the UW-Madison KCI’s primary marketing and communications vehicle with respect to campus-wide entrepreneurship and the sponsor of various campus-wide events and activities. The communication elements of the program feature a website, a Facebook group, a Twitter feed as well as monthly newsletters. The programmatic elements include a series of “Make your passion your profession” events that focus on linking entrepreneurship with other areas of student interest such as the arts, the use of social media in politics (timed to coincide with the 2008 elections), sports and the advance of social causes; the 100 Hour Challenge and the White Board Challenge mentioned above; as well as a Student Venture Seed Grant program. More than just a catchy name, Wiscontrepreneur helps to inform students about entrepreneurship programs and activities and provides them opportunities to apply what they learn in the classroom through a variety of fun and engaging events.

CULTURAL/SYSTEMIC CHANGES

As described at the outset, UW-Madison is undergoing episodic changes with respect to governance at several levels, and is considering major pedagogical changes as well. Some might take the position that the KCI has had very little to do with these governance changes now

underway. Those are seismic political shifts, spurred in part by the 2011-13 Wisconsin Budget Bill, that involve major reforms of the relationships among UW-Madison, UW System, and the State government. At the core of those reforms is the push to allow higher education institutions more local control and flexibility to organize and innovate in ways that could, among other things, permit them to improve their fiscal situations. This set of events is giving rise to vigorous discussions about how campus units, including departments and colleges, our centers and institutes, can be more entrepreneurial. In our view, UW-Madison was far better prepared to have a constructive conversation about entrepreneurial options because the UW-Madison KCI had already forged a cooperative, inclusive view of entrepreneurship that honored creation of value through risk and innovation. The trust that has built up around the KCI at UW-Madison almost certainly contributed positively to our capacity to push an entrepreneurial vision in administrative and academic arenas this past year.

Most of the pedagogical advances made under the KCI were discussed above. The most exciting aspect has been the variety of courses and programs of different types (traditional courses, seminars, bootcamps, the residential learning community, competitions), which have taken shape under the KCI, and the new audiences they have engaged. The primary advances in pedagogy involve the innovative ways in which the professors and other staff organizers of these courses and programs have made their materials and presentations of high enough quality to attract significant numbers of students who engage deeply in the courses. Several case studies of students who have executed a 'start-up' during their course of study at UW-Madison provide evidence that these courses and connections with peers and professors have had an impact on them.

It is fair to ask whether the growing ubiquity of entrepreneurship affected our institutional mission and culture. At one level the answer is no - the overall missions of the university remain teaching, research, and outreach, and this is perhaps as it should be. But, it is also important to add that the way entrepreneurship is recognized as related to each mission has changed. For example, on the research side, the opening of the Wisconsin Institutes for Discovery has created a major innovation-focused center where entrepreneurially-inclined faculty, staff, and students have the opportunity to learn and grow through the collaborative exchange of ideas with each other and potentially with businesses. The physical presence of the Entrepreneurs' Resource Clinic near a main entrance of the Institutes for Discovery building is a physical embodiment of the more explicit orientation of the university to entrepreneurial efforts. The Provost's current drive to expand the research commercialization culture of faculty, staff, and students through the Discovery 2 Product Initiative (noted above) is another reflection of the research mission taking on a more explicit entrepreneurial dimension.

The insertion of entrepreneurship in several new course offerings, certificate programs, and the extramural activities of many more students have all put the topic much more in the mainstream

of campus life. That change in culture is palpable in many ways, including the recent growth of student efforts to launch new for-profit and non-profit enterprises. For the first four years of the KCI program (through June 30, 2011) we counted 14 notable student startups, not including student ventures that were set aside as the students moved on to other things. Of course UW-Madison had student startups for years before KCI but unfortunately we did not track those ventures for the most part. The more important aspect of student startup activity we have seen since the introduction of the KCI is the quality of the ventures and the degree to which the student entrepreneurs are connecting with each other and taking advantage of the diverse opportunities that have become available both on campus and beyond. We describe here briefly two quite different examples, each created by entrepreneurs who learned how to make full use of the resources available:

- Chris Meyer, founder and owner of Sector67, his second startup, received both a BS and a MS in Mechanical Engineering from UW-Madison. As a student, Chris participated in the Schoofs and Tong Competitions, the Burrill Business Plan competition and the 100 Hour Challenge. Through these competitions he won more than \$39,000 in prizes. He competed for and won a grant from the Student Venture Seed Grant program and has a mentor team through MERLIN Mentors. He has also been active in the Early Stage CEO networking roundtables for emerging entrepreneurs. Sector67 is Madison's first "makerspace" - a collaborative workshop providing an environment to learn, teach, build and create next generation technology including software, hardware, iPhone/Android apps, metalwork and arts. Sector67 has already become a key part of the Madison entrepreneurial ecosystem where entrepreneurs can develop prototypes of their ideas and get help in launching their ventures.
- Ankit Agarwal is founder of Imbed Bioscience, Inc. a spinoff based on his graduate research at the UW-Madison that is developing advanced materials for wound healing and surgical applications. Ankit, a Kauffman Fellow, won the 2010 Burrill Business Plan Competition and went on to win the life sciences category in the statewide Wisconsin Governor's Business Plan Competition in 2010. He is an active participant in the Early Stage CEO roundtable breakfast series and a veteran of the Wisconsin Entrepreneurial Bootcamp. 2011 was a year of significant progress for Imbed under Ankit's leadership. He received an exclusive license to two patent applications for using bioactive materials and coatings on medical devices. He published results demonstrating efficacy of Imbed's silver-nanoparticle coatings to prevent wound infections under a leading biologic dressing in mice and pigs in *Annals of Surgery*, the number one journal of surgery, and is currently in conversation with a leading wound dressing manufacturer for partnership. While doing all this he also entered and won the PROPEL business plan competition at the iBio conference in Chicago, IL and presented as one of the 6 international finalists (out of 78 universities) at the Licensing Executives Society business plan competition in London, UK.

These two examples are illustrative of the dynamic, interconnected resources that our student entrepreneurs are using to build their ventures, which are largely the result of the increased emphasis on entrepreneurship that KCI has brought to the campus. The cumulative impact of these new programs is central to the evolution of the campus' culture of entrepreneurship.

As noted above UW-Madison was already abundant in entrepreneurial activities, especially in the life sciences, computer sciences, and engineering. Moreover, WARF's technology development and licensing activities are respected and appreciated by most scholars. The highly decentralized nature of the university and the strong emphasis on research performance was also consistent with entrepreneurial activity. In addition, UW-Madison has a long and highly touted dedication to the Wisconsin Idea, which calls on university faculty and staff to seek to apply knowledge generated at the university to offer creative solutions that can benefit society in Wisconsin and beyond. All of these deeply rooted processes are fundamentally entrepreneurial in nature, and as such there was relatively little resistance with respect to the KCI activities. The bigger challenge was 'indifference' given that for many faculty and staff, entrepreneurship played a large role in their daily activities already. The other key point is that with a broad definition of entrepreneurship that included social and artistic dimensions, we were able to help make the term relevant and attractive to new neighborhoods where it was not so well viewed or embraced prior to the KCI grant.

It is fair to say that the KCI had very little, if any, impact on faculty evaluation, which by legislative statute is under the authority of faculty in their home departments and divisional committees (biological sciences, physical sciences, etc.). That said, the vast majority of faculty are committed and indeed excel at research entrepreneurship. At its heart, successful pursuit of research funding involves all the elements of entrepreneurial behavior (identifying and crafting a solution, executing on the idea and "selling" it with a compelling story). Increasingly this also includes participation in patenting, licensing, and start-up activities. Meanwhile, other faculty members are very active in various forms of applied research and outreach (e.g., extension faculty) that frequently have either direct involvement in entrepreneurial activities or support others pursuing creative business and social development activities. So, in a broad sense, entrepreneurial efforts are already fundamental to faculty evaluations at UW-Madison.

Similarly the broad perspective of the faculty on entrepreneurial activities was largely unaffected by the KCI for reasons already explained above. Most faculty were already active in their research enterprises, and largely interested in or positively inclined toward 'start-ups' and other ways of taking research discoveries to market. However, the perspectives of faculty in certain areas of campus already mentioned were transformed by the opportunity to innovate and include entrepreneurship and entrepreneurs in their classes and workshops. In that sense, the KCI helped to broaden the acceptance and participation of selective faculty in entrepreneurial scholarship and training.

From an administrative perspective, it is probably no accident that the theme of entrepreneurship in administrative discourse grew substantially during the life of the grant, because many of the KCI projects involved UW administrators in various ways (e.g., giving out prizes, welcoming esteemed guests, honoring students, and the like), and were fully embraced and supported by campus leaders. To be sure, the experience of campus-wide cooperation on entrepreneurship activities during the KCI raised awareness in a way that could not otherwise have happened easily or perhaps at all.

There were two instances where KCI programs were met with skepticism or resistance. One was the formation of the Student Business Incubator during the early years of the grant. The issue was whether university property should serve as a platform for students who were building private enterprises. Opposition was resolved through a series of meetings between student incubator organizers, KCI leaders and university administrators that clarified the proposed incubator would serve primarily as an experiential learning vehicle and thus was critical for student hands-on learning experiences. In short, when the incubator concept was framed as a learning tool (and not solely as a means for students to create profitable business operations on public property) the resistance was overcome. The other instance was a matter of initial skepticism from Law School faculty regarding potential student or entrepreneur interest in the Law and Entrepreneurship Clinic, which the KCI was helping to form. That clinic is now a major success as noted above, and most of the opposition has shifted to enthusiasm for the active and broad experience that law students are receiving from working there.

LONG-TERM OUTCOMES

We highlight here several substantive and durable long-term consequences and outcomes of the KCI on our campus. We also highlight activities that the KCI supported at other colleges and universities across Wisconsin that has helped to foster enhanced entrepreneurship education and programming in those communities.

- Entrepreneurship is embedded in several new neighborhoods with broad engagement. The establishment of the Entrepreneurs' Residential Learning Community (ERLC) as a learning center in the suite of housing options that undergraduates can choose from has provided 'entrepreneurship' as the central theme of their learning experience for a year. But the ERLC impact extends well beyond the students who elect to reside there. First, all incoming freshmen who explore housing options now are exposed to the opportunity to participate in an entrepreneurship-focused living experience. Additionally, the placement of the ERLC in a large residence hall has had spillover effects on students from other floors that are not part of the ERLC, in terms of entrepreneurship activities and experiences they see are available. For example, the Wiscontrepreneur 100 Hour Challenge initial kick-off is held in the residence hall that houses the ERLC and has attracted a number of other university housing residents that likely would not otherwise have participated. In this respect, a significant side effect of

the ERLC has been how it has surfaced the visibility of and the option for actively participating in an entrepreneurship-focused campus community to a broad spectrum of incoming as well as current students. The Arts Enterprise Initiative and the highly successful Entrepreneurship in Society course are two other examples of how entrepreneurship has surfaced in new campus neighborhoods. These two examples, as discussed above, have had a powerful impact on students and faculty in areas of the campus where previously entrepreneurship concepts and themes were scarce. These efforts have proven durable through the life of the grant, bolstered by faculty and academic staff in the School of Music and the School of Human Ecology, respectively, who have demonstrated a significant commitment to making entrepreneurship courses and workshops available to large numbers of students. Notably, their efforts have been complemented by support from and assistance by several faculty in the School of Business.

- Entrepreneurship efforts across campus neighborhoods are more integrated and synergistic than they were prior to the KCI grant. This is reflected in: 1) the new Entrepreneurship Certificates, which are cross-campus in scope; 2) the Entrepreneurs' Resource Clinic, which operates in the Wisconsin Institutes for Discovery and unifies a wide range of services that can be of use to those interested in the creation of new ventures; 3) the intensive five-day Wisconsin Entrepreneurial Bootcamp summer program, which has student and faculty participation from a broad swath of campus; 4) the several entrepreneurship competitions, which now draw more entries and participants from a broader array of colleges and majors; and 5) the multiple individual faculty and staff connections that the KCI generated.
- Entrepreneurship is viewed in a positive manner across campus, and is a widely accepted aspect of what UW-Madison should be pursuing in all aspects of its mission. As noted elsewhere in this essay, there seems to be very little resistance to this concept now compared to five years ago. Part of that change is consequent of larger political-institutional changes that have occurred over the past few years. But at the same time, the KCI at UW-Madison encouraged many dialogues around campus about what the concept represents, and how the challenge of taking risks to create value through innovations of various types is a common one across the university and not limited in applicability to business students or others involved in high tech start-ups.
- We extended the reach of the KCI to other colleges and universities in Wisconsin. Prior to the KCI, entrepreneurship activities at other University of Wisconsin System campuses were limited mostly to UW-Whitewater and UW-Milwaukee. As we began building our efforts on the UW-Madison campus we visited many of the other UW System campuses to learn about programs available to students and faculty, and to describe plans for expanding entrepreneurial behavior at UW-Madison through the KCI. We worked with UW System administration to organize the first-ever UW System-wide Summit on Entrepreneurship that

attracted faculty and staff from twelve of the thirteen four-year institutions as well as faculty from our two-year colleges and UW Extension. Subsequently we initiated a competitive statewide seed grant program open to other campuses where we asked for their best ideas about how to foster greater awareness of and access to entrepreneurship on their campuses. Ultimately we provided seed funding for entrepreneurial programming at both UW-Platteville (which has created a business plan competition, an invention and ideation summit, a CEO roundtable and hosted an Entrepreneurial Tour) and UW-Green Bay (which is creating a student innovation contest, a guest speaker series and innovation workshops). Both universities are working closely with their local business communities to ensure that the programming will continue into the future.

Seed funding was also provided to BizStarts Milwaukee, the mission of which is to create a vibrant, innovative and prosperous entrepreneurial business climate in the Milwaukee 7 region of southeastern Wisconsin by inspiring, nurturing, connecting and celebrating entrepreneurs and their companies. KCI seed funding enabled creation of the BizStarts College Consortium program, which promotes outreach and expansion of entrepreneurial programming and courses on the 22 colleges, technical schools and universities in the Milwaukee 7 region. While some of these campuses had entrepreneurship programs, most did not and the lack of critical mass at most of the campuses precluded creation of viable mechanisms for changing the student experience. BizStarts Milwaukee's efforts have resulted, either directly or indirectly, in a number of entrepreneurial programming developments across the region's colleges and universities. Activities put in place through the College Consortium include region-wide networking events, celebrations of entrepreneurial achievements, a coordinated multi-campus business plan competition and exchange of best practices.

Finally, we have worked closely with WiSys, the patenting and licensing arm of WARF that serves most of the other UW System campuses, in the creation of a web-based entrepreneurship training course specifically targeted to students, faculty and staff at UW System comprehensive campuses that have or will be creating Emerging Technology Centers. The course deals with general business concepts such as sales, marketing, intellectual property, legal structures of business and networking, and is designed to assist those students and faculty outside of Madison and Milwaukee most likely to engage in technology entrepreneurship activity. Phase 1 of the course is on-line and operational as a pilot while the content for Phase 2 is currently under development.

INSIGHTS GAINED

We have gained a number of insights into entrepreneurship education, though we do not presume that they are unique. We discuss several important ones here with the hope that they may be

instructive to others contemplating how to expand interest in and access to entrepreneurship education across a large, decentralized university such as UW-Madison.

- Define entrepreneurship broadly. We found that as a starting point it is valuable to have and project an inclusive definition of entrepreneurship. To this end we developed a broad view of entrepreneurship early-on, which allowed us to bring initiatives to campus neighborhoods that had minimal entrepreneurship-related activity in the classroom or extramurally. We empowered local faculty in those schools to develop the activities which they thought would attract and engage their students and colleagues, and we had cross-campus collaborative links available to enable them to ramp up their courses and programs to achieve high quality engagement and outcomes in a short time.
- Recognize distinct audiences. Related to this first point is the importance of recognizing the distinctive audiences across a major research university, and offering curricular and organizational innovations that reflect and address those audiences. In our case we created focused programs for those interested in the arts and in non-profits, recognizing that learning to be entrepreneurial is as important to someone needing to manage their own career as an artist or in starting an organization to promote social justice as it is for the person interested in starting a software company. We established an Entrepreneurial Bootcamp to provide graduate students in the sciences, engineering and other related disciplines with a foundation in the basics of technology entrepreneurship. And we created a Law and Entrepreneurship Clinic to provide experience to law students interested in helping entrepreneurs, or becoming entrepreneurs themselves.
- Capitalize on experiential learning. The importance of experiential learning cannot be underemphasized as a compliment to classroom learning and an incentive for further academic training. Experiential learning was already a hallmark of the educational opportunities to which a student has access at UW-Madison, but it seems particularly relevant to those interested in venture creation in one form or another. Through and in concert with the KCI, the university created or expanded a diverse set of innovation competitions. As noted above new competitions include the Wiscontrepreneur 100 Hour Challenge, which has drawn several hundred students the last few years, including some from other colleges and universities in the region. The KCI also triggered the expansion of the Burrill Business Plan Competition to include business plans from students in all majors, rather than just business and engineering students. Students also gained experiential learning through programs such as the Kauffman Entrepreneurship Community Internship Program run by our Morgridge Center for Public Service, which provided graduate and undergraduate students the opportunity to become social entrepreneurs who inspire transformational changes in their communities by engaging in a summer or semester long internship with a non-profit organization.

- Provide physical space for entrepreneurship activities. The provision of physical space for new entrepreneurial activities goes far toward demonstrating the university's commitment to fostering entrepreneurship. We established an Entrepreneurs Residential Learning Community in a residence hall, provided valuable space for the development of the Entrepreneurs' Resource Clinic in the Wisconsin Institutes for Discovery, as well as facilitated the creation of space available for the Student Business Incubator in the Student Services Tower. Particularly as it relates to the Incubator, we found that the combination of providing space to nurture grassroots or bottom-up entrepreneurial efforts with excellent mentorship and guidance empowers students to take their ambitions to a higher level.
- Focus on new opportunities. It is important to recognize where there is new opportunity to expand the entrepreneurial culture, and where putting effort would simply be redundant. We worked hard to find ways to add value and depth to what was already a highly entrepreneurial campus by innovating into open spaces rather than competing with what was already there. In the process, we mobilized key business school resources into other campus venues, where the two-way exchange proved quite valuable to all parties concerned. In particular, the three new entrepreneurship certificate programs allow us to leverage the substantial business school expertise and make it available to students across the entire campus in ways that did not exist in the past. We also developed excellent ties with entrepreneurs in the area who were interested in what we were trying to do with the KCI at UW-Madison and utilized their experience and expertise to engage and assist students. A major example of this is the creation of MERLIN Mentors, a formal team mentoring service open to all entrepreneurs and modeled on the successful Venture Mentoring Service at MIT. MERLIN celebrated its third anniversary in Fall of 2011 and has more than 100 peer-reviewed mentors engaged in more than 30 active mentoring teams, many of which are working with current or recent UW-Madison students. The program was created by the Office of Corporate Relations in cooperation with WARF and the University Research Park. Although these entities serve in an advisory capacity and the Office of Corporate Relations provides back-office administrative support, MERLIN is 100% run by the mentors.
- Use campus-wide events to highlight entrepreneurship. Finally, we found that there was great value in using events to bring together the disparate neighborhoods of entrepreneurial activity around the campus and to highlight those activities in a focused way. For example, we encourage all of the schools and colleges across campus to have at least one entrepreneurship-related event during Global Entrepreneurship Week in November, and this year we had no less than five events at the new Wisconsin Institutes for Discovery alone. In fact, the programs during this year's Global Entrepreneurship Week seemed to have had a compelling effect, where people who came to one event would network with others and then come to other programs to deepen those initial ties. Similarly, we have created a new UW-Madison Entrepreneurial Achievement Award, which recognizes the great vision and

leadership of UW-Madison alumni who have made a significant impact with their own entrepreneurial pursuits. This event, which takes place in late April, provides another occasion to underscore for the campus and the larger public the importance of entrepreneurship and the opportunities the university provides for students and others interested in pursuing an entrepreneurial endeavor.

A LOOK AHEAD

As noted above, the continued slow pace of economic recovery and serious structural budget issues that UW-Madison faces raise concern about our ability to sustain all of the initiatives started under the KCI. We are convinced that the KCI grant has enabled us to create a substantially broader and stronger culture of entrepreneurship on this campus. Similarly our statewide efforts have helped to create or expand viable programs at a number of colleges and universities across the state that serve as visible examples of what can be done to enhance interest in entrepreneurship by students and faculty with limited resources.

While the final accounting is not yet official, we are pleased that with our FY2011 annual matching report we have reached our KCI match obligations. This is particularly significant for us because we did not have the benefit of a single large donor endowing a broad campus-wide entrepreneurship program. Instead we reached our match requirement through a myriad of diverse and targeted outreach efforts. Match reported to date for the program flowed from activities on campus for which either small donations have been received to fund specific initiatives or, more frequently, where the shifting focus from in-kind institutional, faculty and staff support has aligned with KCI program objectives to foster an enhanced entrepreneurial culture. The fact that we have seen these in-kind activities grow in magnitude over the course of the grant encourages us that they are significantly related to the influence of the KCI. In our opinion, a side-effect of pursuing this approach to the match requirement is that we have more involvement and support from diverse campus entities, and have knit together a more bottom-up mix of entrepreneurial initiatives that collectively strengthen the overall campus entrepreneurial culture in a way that a single campus-wide entrepreneurial center likely could not have.

Having said that, we do have a *de facto* campus-wide entrepreneurial center but with origins that are particularly suited to the Wisconsin Experience. With the opening on December 2, 2010 of the new Wisconsin Institutes for Discovery facility and the associated Town Center public space, we have completed one of two signature steps toward implementing our KCI plan for campus-wide entrepreneurship. Entrepreneurship-related activities at the Institutes for Discovery include a variety of events and access to the Institutes' resources, but the major and most visible element of these is the Entrepreneurs' Resource Clinic located at the west end of the Town Center. The Resource Clinic and the other entrepreneurship-related programs in the Institutes for Discovery are still in their 'maiden voyage' stage, but we now have one year of operational experience with

them and will be fine tuning the programs with the knowledge that they will be part of the campus entrepreneurial landscape for years to come.

Unfortunately the other major initiative we hoped to see emerge as part of our statewide entrepreneurship goals, which related to access to capital for emerging high growth ventures and was originally envisioned as the Wisconsin Venture Center, has not come to fruition. However, a proposal to address this same access to capital issue in the form of a state chartered \$100-200 million fund of funds has been debated in the Legislature throughout 2011 and has substantial support and traction with key legislators, the governor and key interest groups. It seems likely that the Legislature will pass the legislation authorizing a fund of funds in the Spring 2012 session.

We are pleased that many, although not all, of the KCI funded programs at UW-Madison have secured continuing funding. All of the programs are aligned with and complementary to the programs through the Wisconsin Institutes for Discovery which, as noted are secure and will be active on campus for the foreseeable future. While we have demonstrated demand for and interest in continuing the various KCI funded programs, we must temper our expectations due to the significant budget issues facing the entire campus stemming from actions of the State of Wisconsin to reign in ongoing structural deficits.¹ At this writing, the following programs are currently secure with a commitment for future funding beyond the end of the KCI program in 2012:

- Entrepreneurship Residential Learning Community
- Wisconsin School of Business course expansion and campus wide entrepreneurship certificates
- Entrepreneurship in Society course
- Technology Business Development Institute programing via the UW-Madison Small Business Development Center
- Entrepreneurship and Sustainability Community Forums (and the associated 1 credit course)

Specifically with respect to the Wisconsin School of Business, we are pleased with the commitment the school has made to fund the expanded sections of its undergraduate entrepreneurship course and create the campus wide certificate programs. This is made possible by the alignment of the KCI objectives with the school's strategic objectives. In fact, one of the key objectives in the strategic plan of the Wisconsin School of Business is the expansion of entrepreneurship across the campus.

¹ The biennial state budget signed by the governor in late June 2011 included a \$94 million cut in state aid to UW-Madison. In late December Governor Walker announced further budget cuts for UW System. The allocation of these cuts to the various schools and colleges at UW-Madison has not been completed but one impact has been that some of the departments have had to hedge on final commitments related to continuation past June 30, 2012 of programs that receive KCI funding.

Several additional programs started or expanded in conjunction with the KCI are major contributors to the campus-wide culture of entrepreneurship. None of these programs have received significant KCI funding and all will continue beyond the end of the KCI grant:

- Wisconsin Entrepreneurial Bootcamp
- Law and Entrepreneurship Clinic
- Student Business Incubator
- MERLIN Mentors
- Gilson Bootstrapping Lecture Series (held at the Wisconsin Institutes for Discovery)
- Burrill Business Plan Competition
- Schoofs Prize for Creativity
- Tong Prototype Prize
- Arts Enterprise Initiative including the Arts Enterprise student organization, the New Arts Venture Challenge and the Arts Enterprise website
- Global Stewards Sustainability Prize
- QualComm Wireless Innovation Challenge
- First Look Investor Forums (a venue for early-stage and concept-stage UW entrepreneurs to discuss their research and preliminary business concepts with representatives from the venture capital community)
- Early Stage CEO Breakfast Roundtables (peer-level networking events for CEOs whose companies are in the early stages of establishing their business operations)

Future funding for a few other programs initiated and funded under the KCI has not been resolved, including the Arts Enterprise course “Art as Business as Art” and Wiscontrepreneur communications initiatives including Wiscontrepreneur.org, the Wiscontrepreneur Facebook and Twitter presence, monthly newsletters, and competitions such as the 100 Hour Challenge and the Entrepreneurial Deli. Discussions are ongoing across campus to secure commitments for continuation of the above programs and the expectation is that once budget uncertainties are determined we will be in a better position to commit to sustaining the above initiatives.

CONCLUSION

As noted at the outset, thinking and acting entrepreneurially is one of the well-established traditions across much of the UW-Madison campus. It is a very large place, with decentralized organization and distinctive neighborhoods. Our goal with the KCI was to recognize and embrace that decentralization, by working with faculty, staff and students within those neighborhoods to deepen the culture of entrepreneurship, especially in those parts of campus where there were opportunities to greatly enhance the opportunities for students to learn about and experience it. We did this through enhancing the curriculum and by strengthening experiential learning opportunities in residence halls, through competitions, and by the

establishment of spaces, places, and networks where students could explore their entrepreneurial ideas.

On balance, though we have some end-of-grant disappointments and the likely loss of some of the programs that the KCI enabled us to launch, we believe that there is a substantial enhancement of the Wisconsin Experience for students, as well as for faculty and staff, in the form of an expanded and energized campus-wide culture of entrepreneurship. Further, we believe we have made a substantial contribution to awareness of and access to entrepreneurship statewide, in the best tradition of the Wisconsin Idea, through the example we offer to other campuses and through the various programs we have initiated at selected other colleges and universities around the state.

We are grateful to the Ewing Marion Kauffman Foundation for selecting UW-Madison as a Kauffman Campus, and for the leadership the Foundation's officers and staff have provided in advancing entrepreneurship and an entrepreneurial culture in the United States and around the world.