

Strategic Plan

The Office for Technology and Economic Development
University of Illinois

Purpose

Responsibilities: The Vice President for Technology and Economic Development (VPTED) is the University's senior officer and advisor to the President and the Board of Trustees, working with the Trustees' Technology and Economic Development Committee, on technology commercialization and economic development. This includes intellectual property management, start-up business development, research parks and incubation facilities, federal, state and local technology-based economic development initiatives and programs and related matters. The Vice President exercises direct line operating authority over the University's major offices and entities involved in technology commercialization and related economic development and serves as the principal officer of the Board of Trustees (the sole owner) to Illinois VENTURES, LLC and the University of Illinois Research Park, LLC.

Mission: To broaden and strengthen the development of the local, State, regional and national economies through the effective management, transfer and commercialization of University-based technologies and intellectual properties, supporting the creation of jobs, careers, businesses, and wealth, while fostering continuous advancement of the University's premier education and research programs.

Vision: By delivering on the promise of a great public research university to create new economic opportunities through the commercialization of research-based technologies and innovations, we will improve the well-being of people and the economies of communities, and of our State, region and nation.

Values: In all we do, we will:

- Aim high
- Have a passion for, and commitment to excellence
- Strive to control our destiny
- Be accountable, responsible, trustworthy, loyal and professional
- Care and treat others with dignity and respect
- Be creative and innovative
- Value service
- Be market savvy, customer driven and realize a fair value

Mandates:

- Bayh-Dole Act of 1980: As a matter of federal policy universities are entitled to patent and own inventions resulting from federally sponsored research and are obligated to pursue commercialization and to adhere to mandatory reporting and compliance requirements.

- Senate Resolution 296 (SR296), March 23, 2000, Senate of the 91st General Assembly, State of Illinois: Resolved that the University of Illinois has a responsibility, as a distinct part of traditional responsibilities for instruction, research and public service, to contribute to Illinois' statewide economic development through the commercialization of new technologies and scientific innovations.
- The General Rules Concerning University Organization and Procedures, Article III Section 1: The primary purpose of the University's intellectual property policy is to provide the necessary protections and incentives to encourage both the discovery and development of new knowledge and its transfer for the public benefit as quickly and effectively as possible; a secondary purpose is to enhance the generation of revenue for the University and for the creators of the new knowledge.
- University Faculty Research and Consulting Act (110ILCS 100): By law faculty members have to have prior written approval to perform compensated outside research or consulting services for any person (or legal entity) other than the University. This and related articles of the University's Statutes and of the University's General Rules Concerning University Organization and Procedure are implemented through the University's 'Policy on Conflicts of Commitment and Interest', its annual 'Report of Non-University Activity' and requisite development and approval of 'Conflict of Interest and Commitment Plans.'

Strategy

Strategic Intent: Combine excellence in service to faculty, in technology commercialization practices, in research park and incubation services and in economic development policy and program leadership so the University of Illinois is best among its peers and competitors and is respected and recognized as locally relevant and globally pre-eminent for assuring the public benefits from new knowledge creation and for fostering high-tech economic growth locally, in Illinois and nationally.

Environmental Assessment:

- Globalization is challenging the nation's traditional economic competitive advantage of creativity and research/development-based innovation and new technologies. As a premier research university this creates a significant responsibility and a tremendous, high-level opportunity to lead in new knowledge creation and drive comparative advantage that yields economic growth through innovation and technology commercialization.
- The University's research spending and the resulting knowledge creation, when combined with technology commercialization and associated innovation, have the potential to be viewed as an essential asset and the foundation for high-technology economic growth by the State and by the communities in which the University operates. Maturing this view creates high-level opportunities for the differentiation of the University among its competitors and for its stakeholders.

- Conversion of new technology into economic growth requires additional elements beyond robust scientific research capabilities. The requisite additional elements include human capital with domain and entrepreneurial experience, venture investment capital and domain-relevant business infrastructure. Illinois and the Midwest region lag behind other areas of the country with respect to these assets. Efficient efforts to drive technology – related economic growth requires a focus on specific domains where the gaps are minimized. As a dominant indigenous research asset in Illinois and the Midwest, the University is well suited for a differentiated role versus competing entities.
- Because of the ever increasing competition for ever more scarce public and institutional resources, the technology commercialization complex needs to yield revenues above costs and to be a long-term stable source of discretionary institutional funds for the University.
- Growing and developing the economies and the communities in which the University’s campuses are domiciled is absolutely essential for the long term growth, competitiveness and overall well-being of the campuses and thus the University.
- Recruitment and retention of world-class science, engineering, medical and related faculty mandates best-of-class technology commercialization.
- Technology commercialization adds a unique and highly-beneficial differentiating dimension to the academic mission of the University, enhancing competitiveness for faculty and students in the academic marketplace and distinguishing University of Illinois graduates.

Competitive Analyses

Chicago and Urbana-Champaign Offices of Technology Management

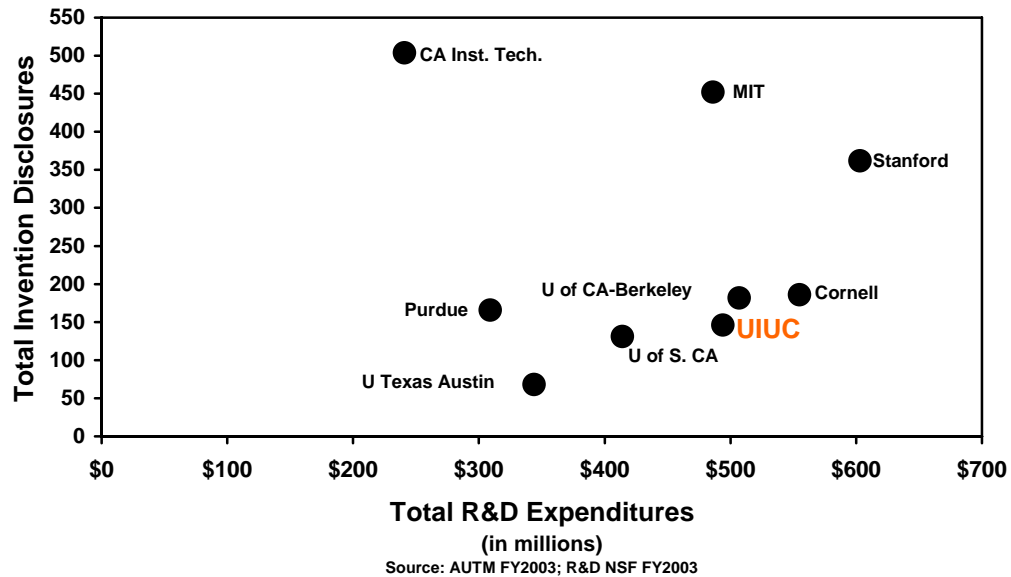
There is a complexity to university technology transfer that transcends the mere comparison of one institution to another assuming ‘all things are equal’. The range of inputs that shape effective technology transfer and commercialization processes include but are not limited to: research expenditures, access to venture and seed capital, entrepreneurial incentives, university culture, environment and infrastructure, industry facilitators, and overall technology transfer leadership. Clearly, technology transfer practices that work in one environment may not be successful in another. For each Office of Technology Management, a set of competitor/peer institutions are selected to provide a notion of the competitive landscape and the position on this landscape of the Chicago office and of the Urbana-Champaign office. This positioning violates the *ceteris paribus* assumption and presents a bi-variant analysis of a multi-variant environment. Given these limitation, the competitive analysis is informative.

Office of Technology Management at Urbana-Champaign: The strengths of the Urbana-Champaign engineering programs, its land-grant status, the level of federal funding received and its relatively early stage of development in technology transfer provided a backdrop for comparison with other institutions. Competitors/peers were selected for their comparable level of research spending and institutional similarity.

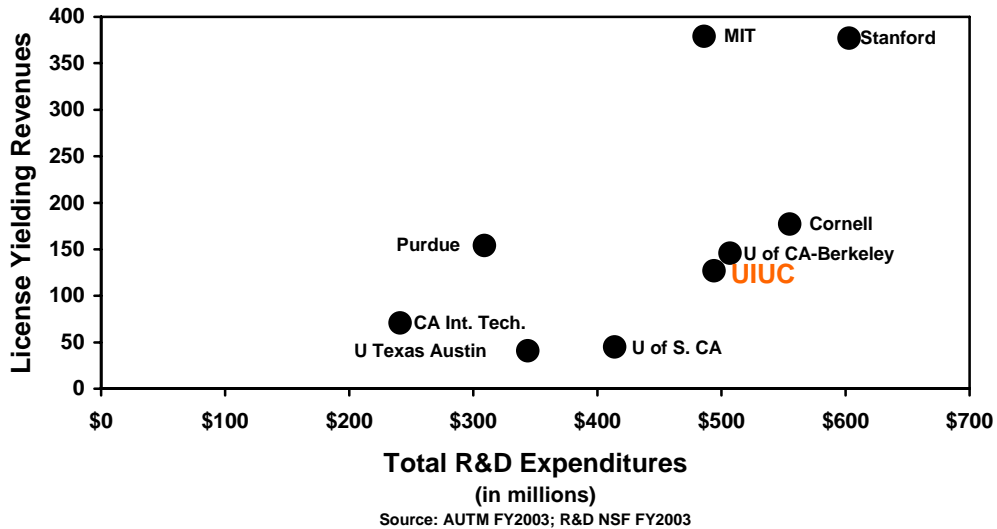
MIT and Stanford were chosen as having older technology transfer offices and being consistently viewed as among the national leaders in university technology transfer and entrepreneurial activity. The University of California-Berkeley and Cornell are more comparable institutions organizationally. Purdue and the University of Texas-Austin provide good reference points from well regarded public research universities – Purdue, like UC-Berkeley and Cornell, is a land-grant and Texas at Austin is a major non-land grant public research university. California Institute of Technology (Caltech) is a strong engineering institution with comparatively high number of licenses and invention disclosures from a more modest level of research expenditures.

As a peer group, this set of institutions provides a good mix of technology transfer practices, activities and environments that can be examined and analyzed with the aim of delivering effective management, transfer and commercialization of University-based technologies and intellectual property. Specifically, the Competitive Positioning Maps compare research expenditures versus invention disclosures and versus licenses yielding revenues, respectively. Among the nine (9) competitor/peer universities, the Urbana-Champaign campus ranked 4th in research spending, 7th in invention disclosures and 6th in licenses yielding income.

**University of Illinois at Urbana-Champaign
Competitive Positioning Map
Research Spending vs. Invention Disclosures**

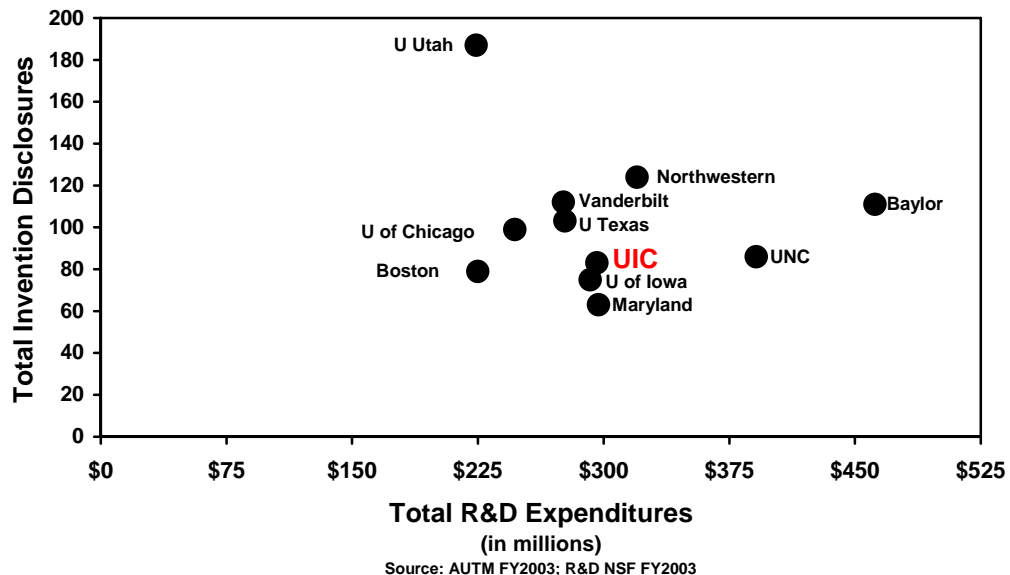


**University of Illinois at Urbana-Champaign
Competitive Positioning Map
Research Spending vs. License Yielding Revenues**

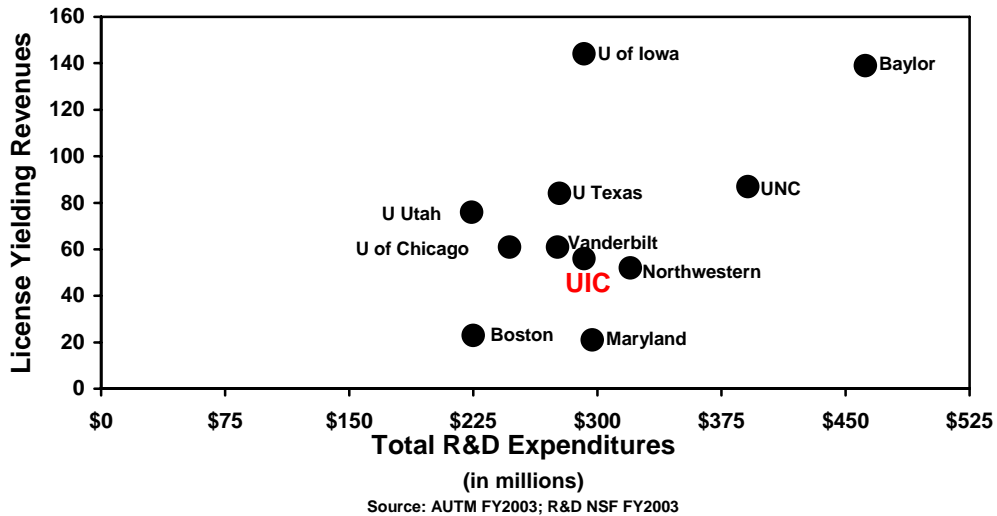


Office of Technology Management at Chicago: The level of research expenditures and the existence of a major medical center was the base for selecting competitors/peers for the University of Illinois at Chicago. Iowa, Texas Medical Center, Utah, North Carolina-Chapel Hill and Maryland are public universities. Private peers include Boston University, University of Chicago, Vanderbilt and Northwestern. Of the ten (10) competitor/peer institutions, UIC ranks 5th in research expenditures, 7th in invention disclosures, and 7th in number of licenses yielding income.

**University of Illinois at Chicago
Competitive Positioning Map
Research Spending vs. Invention Disclosures**



**University of Illinois at Chicago
Competitive Positioning Map
Research Spending vs. License Yielding Revenues**



IllinoisVENTURES

The primary point of differentiation between the commercialization apparatus the University of Illinois and those of its AAU and AUTM-leading peers is the nature and scale of its start-up services entity. Through the leadership of a highly-dedicated consortium of University administrators, prominent alumni, and experienced operating professionals IllinoisVENTURES has emerged as a unique and industry-leading example of university-based entrepreneurial cataclysm.

As noted in the figure below, most major research institutions have organized commercialization engines that include, at a minimum, a designated licensing office as well as some form of physical facility (research park and/or incubator). Many, but not all, have extended their systems to include some version of support for research-based start-ups, often through formal “start-up service” entities created to offer coaching, business planning, and access to networks of resource relationships that include management candidates and various forms of funding. A small minority of leading centers of research have extended this effort to include some form of organized capital formation, either in the form of smaller scale angel networks and grant/seed funding entities, or in a small subset, committed venture funding vehicles.

The University of Illinois is unique amongst this group, in that the scale of its operation, Illinois VENTURES, is among the largest (over \$30 million in committed capital to-date), but also reflects a unique structure which leverages experienced industry professionals for highest quality governance and operation; an independent, for-profit structure to facilitate a commercial “pace” of execution; an unprecedented and highly-effective hybrid of public and private sources of funding to bridge the well-documented early-stage funding “gap”. This arrangement has allowed the University to make significant progress towards building a sustainable, repeatable mechanism for business creation, and has garnered well-deserved attention for the University for its regional and national leadership within the technology transfer realm.

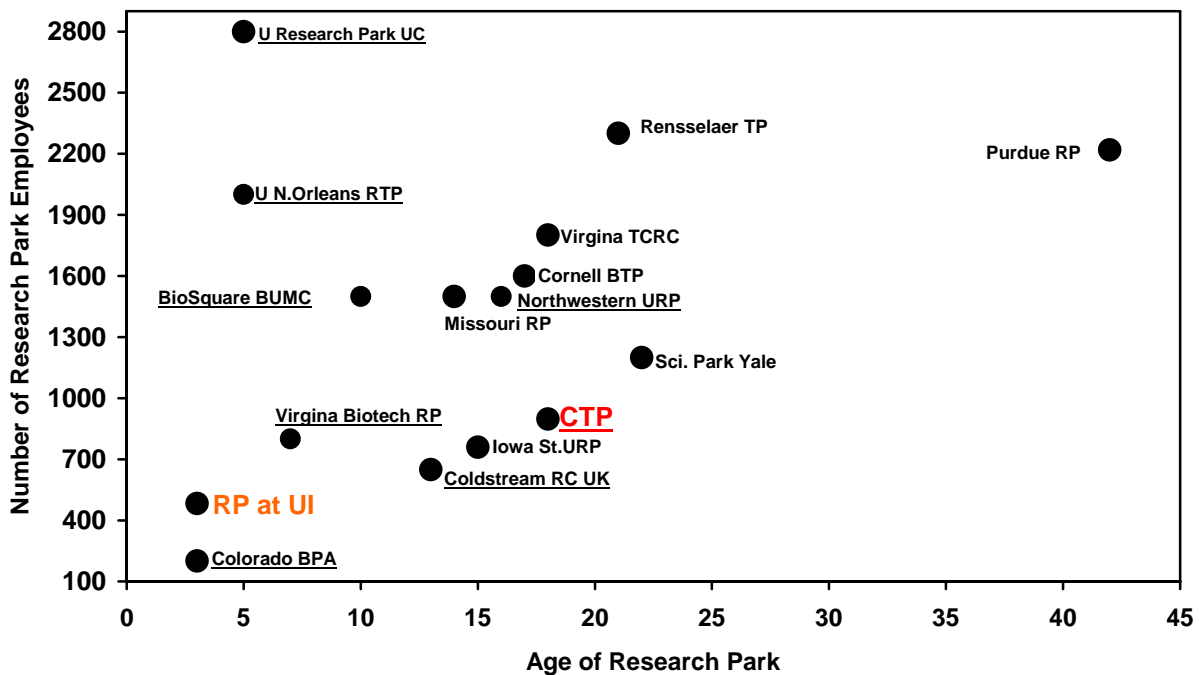
	University of California	Johns Hopkins University	Massachusetts Institute of Technology	University of Washington	University of Illinois	University of Wisconsin at Madison	State University of New York	Stanford University	University of Pennsylvania	Penn State University	Harvard University	University of Colorado	University of Pittsburgh	University of Minnesota	Cornell University	Purdue University	University of Chicago	Northwestern University	University of Michigan
Affiliated research park	●	●	○	●	●	●	○	○	○	●	○	●	●	●	●	●	○	●	○
Affiliated start-up services entity	●	○	●	●	●	●	●	○	●	●	○	●	●	●	●	●	●	●	●
Angel/grant seed capital funding vehicle	●	●	●	●	●	●	○	●	○	●	●	○	●	●	●	●	○	○	●
Committed venture capital funding vehicle	○	○	○	○	●	○	○	○	●	○	○	○	●	○	●	○	○	○	●
* Professionally operated, governed	○	○	○	○	●	○	○	○	●	○	○	○	●	○	○	○	○	○	○
* Committed funds >\$25million	○	○	○	○	●	○	○	○	●	○	○	○	●	○	○	○	○	○	○
* Hybrid public/private sources of funding	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Research Parks and Incubation Facilities

While several indicators of performance are available to assess the relative competitive position of the research parks and start-up business incubation facilities, there is a high level of correlation between these several indicators (e.g., number of square feet of space, payroll, and income taxes) and the number of individuals employed in the parks and their associated incubation facilities. Of course, the number of years a park has been under development should positively impact the employment numbers in the park, all other things being equal. Accordingly, comparing the age of the park with the number of employees provides a reasonable indication of performance.

The competitive positioning map shows the relative positioning of the Research Park at the University of Illinois and its incubation facilities serving the Urbana-Champaign campus and the Chicago Technology Park, and the University's incubator, Research Center, serving the Chicago campus. The Research Park ranks 28th in age and 45th in number employed while the Chicago Technology Park ranks 14th in age and 29th in number employed out of 69 research parks reporting in the January 2003 AURP "University Research Park Profile".

**University of Illinois Research Park and Chicago Technology Park
Competitive Positioning Map
Employees vs. Age of Research Park
Large Metropolitan vs. Small Metropolitan**



Source: "University Research Park Profile" AURP, January 2003

Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

Strengths: Statewide presence and land grant mission; a complete system of technology commercialization; highly regarded graduate programs; distinguished and recognized (nationally and internationally) programs in science, engineering, health sciences and related fields with faculty that have a strong track record in competing for sponsored research funding; more than \$800 million in annual total research spending; competitive research infrastructure and facilities; world class institutes that are driving cutting edge knowledge and discovery; two complementary research campuses; culture that embraces high-expectations and excellence in research and the complementarity between research and instruction; Chicago presence; strong research collaborations with research universities and federal laboratories in the region and the nation; emerging capabilities in technology commercialization accompanied by growing recognition and respect; evolving recognition as a leader for technology based economic growth by local and State elected and appointed officials, agencies and other Illinois research universities; good internal institutional commitment and Board of Trustees' commitment to technology commercialization; strong alumni base that may be drawn upon.

Weaknesses: Campus cultures' limited embracement of innovation and technology commercialization as an element of the research mission, a complement to the instructional mission, and important to public service and as an obligation under University, State and federal policy; view that there is inherent irresolvable conflict and explicit incompatibility between the marketplace and the academy; no direct recognition of innovation and technology commercialization in the promotion and tenure process; absence of uniformity in technology transfer practices across UIC and UIUC creating barriers to cohesive branding through effective marketing of University technologies; cumbersome conflict management processes and procedures; difficult history of technology commercialization with legacy negative reputation; lack of understanding and trust in the University's tech transfer system by faculty inventors and external customers; limited faculty inventor understanding of responsibilities of University to commercialize innovations and technologies; underdeveloped team play among tech commercialization units; misalignment of incentives across units; weak underdeveloped corporate/private sector collaboration; small market environment of the Urbana-Champaign campus; limited entrepreneurial skills and spirit and limited early stage investment capital in Illinois and Midwest; a Midwest ethic that undervalues the learning experience of failure in entrepreneurship.

Opportunities: New research infrastructure coming on-line on both research campuses; exploitation of the growing stakeholder expectations for high-performance technology commercialization for increased recognition and general support for the University; exploit proven economic development performance to substantially increase direct State and other public funding for new research facilities and technology commercialization; generate significant revenues from technology commercialization for faculty inventors and for the University; improve overall performance on technology commercialization; strengthen the interface with students and the academic mission; potential of the Chicago Technology Park and the Research Park at the University of Illinois, Urbana-Champaign; become a recognized respected leader.

Threats: Reduction in federal funding for research; inability to recruit and retain world class faculty and technology commercialization professionals; erosion of State support for higher education; potential retreat towards non-competitive poor technology commercialization practices; impatient stakeholders; major changes in patent law; lack of working capital for patent protection; limitations imposed on commercialization practices driven by limited tolerance for political risks linked to being a public university; local community development aspirations politically overpowering market driven best-of-class technology commercialization practices; strength of anti-commercialization sentiment in the campuses' cultures.

Strategic Issues:

1. How can incentives within and across units of OVPTED and the academy be best aligned to achieve sustainable optimal technology commercialization performance?
2. How do we keep complex commercialization processes simple and transparent for those served?
3. How do we build better partnerships with others (within the University and its colleges; business and industry sector; finance sector; university and research lab sector; civic community; public sectors) that create mutual benefits?
4. How should we organize and refine practices to best bundle excellence in faculty and customer service with revenue optimization and economic impact?
5. How should we measure success?
6. How do we assure in a time of ever increasing competition for ever more scarce public and institutional resources that there is adequate funding for the technology commercialization complex?
7. How do we realize our aspirations for leadership in technology commercialization while needing to compensate for/off-set characteristics of the Illinois and Midwest private sector environment which are limiting to the optimization of technology-based economic growth and development?
8. How can the necessary scale and scope for success in technology-based economic development be realized in the small market of the greater Champaign region?
9. How can we assure the University fulfills its obligations and responsibilities under federal law and State policy to foster technology-driven economic growth?
10. How can we leverage technology commercialization accomplishments to contribute to the branding, reputation and stature of the University as a premier comprehensive public research institution and recruit increased general and specialized private and public funding?

11. What can we do to help assure the University is in general an innovative, creative nimble organization?

Strategic Goals:

1. Achieve sustainable financial success and an adequate, sustainable return on deployed public and private resources through value creation.
2. Be a recognized leader in technology commercialization and in fostering technology-based economic growth.
3. Assure the excellence in technology commercialization, continuous improvements and the highest level of performance in:
 - Technology management practices including invention evaluation, inventor communications, patenting procedures, marketing and sales, licensing practices and enforcement all within a culture of services and partnering;
 - Start-up company business development support and access to developmental and early stage investment capital; and
 - Research park and incubation services for growth, development, retention and attraction of technology companies.
4. Achieve high level customer and stakeholder satisfaction for services and outcomes.
5. Enhance and support research and instruction; expand educational opportunities for undergraduate, graduate and professional students to experience and participate in the technology commercialization and entrepreneurial processes.
6. Leverage success in technology commercialization and economic development into general and specialized public and private support for the University.

Stretch Ideas:

1. By 2010 the Offices of Technology Management generate four (4) times their annual operating budget (excluding patent protect working capital spending) in revenues from sale of OTM equity in VENTURES supported and other start-ups and license revenues.
2. By 2010 Illinois VENTURES is self supporting and is experiencing “referenceable” successes (a financially successful exit of a start-up) at an average rate of one per year.
3. By 2010 the Research Park at the University of Illinois and its incubation facilities will: 1) have a total employment of 2,000; 2) have added key amenities (e.g. hospitality, service and related operations); and 3) have developed special-purpose facilities to retain and/or attract technology-related companies.

4. By 2010 the University will work with the Illinois Medical District so the Chicago Technology Park will: 1) have total employment of 1,800 (including employment in the University's Research Center incubator); 2) have acquired needed additional acres (at least 10 acres) and acquired/developed needed additional commercial space (at least 90,000 sq ft) to retain and attract technology-related companies; 3) have add key amenities (e.g. hospitality and conferencing facilities); and 4) have elevate the brand, image, reputation and visibility of the park locally, regionally and nationally.
5. By 2010 the relationship between the University and the Chicago Technology Park will be optimized and guided by the University of Illinois Research Park, LLC, including requisite resources to assure the economic development potential of the Chicago Technology Park is realized.
6. By 2010 have 600 students engaged each year with the technology commercialization units, with the incubation facilities, in incubating companies and at firms in the research parks.

Resources:

Office of the Vice President for Technology and Economic Development:

- Maintain real value of current operating budget
- Secure \$500,000 in new funds for special projects and as seed funding for new initiatives.
- Secure a \$1.0 million to competitively seed inter-campus research with high commercial potential.

Offices of Technology Management:

- Maintain real value of current operating budgets.
- Secure \$4.6 million in annual working capital for patent expenses (\$2.3 million for each office).
- Secure \$1.1 million annually from net license revenues for un-reimbursed patent expense.
- Secure \$325,000 to fund an at-risk compensation plan for OTM professionals.

IllinoisVENTURES, LLC:

- Maintain real value of current operating budget.
- Raise Illinois Emerging Technologies Fund II.

University of Illinois Research Park, LLC:

- Maintain real value of current operating funds from for incubation facilities (EnterpriseWorks).

- Secure \$4.5 million in capital funding for utilities and telecommunications infrastructure.

Chicago Technology Park:

- Secure \$200,000 in annual operating funds for Research Center and maintain the real value of the operating line.

Targeted State of Illinois funding for Economic Development Capital Projects and Operations:

- This will be achieved as part of the State's economic development policies and programs working closely with the Governor's Office and the Illinois Department of Commerce and Economic Opportunity (and successor agency.)

Implementation and Performance Measurement

Each unit will operate under a 5-year business plan and an annual operating plan. The performance metrics will be articulated in the business plans and detailed in the annual operating plans. Measurement of results will be done annually when performance against the goals in the annual operating plans is conducted.