

NEW ORLEANS MEDICAL DISTRICT

LEADERSHIP AND MANAGEMENT WORKSHOP  
JANUARY 30, 2007

LEADERSHIP AND MANAGEMENT ORGANIZATION EXAMPLES

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LEADERSHIP AND MANAGEMENT ORGANIZATION EXAMPLES

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## LEADERSHIP AND MANAGEMENT ORGANIZATION EXAMPLES

### Introduction

#### PURPOSE

This work paper is a compilation of information about leadership, management, and governing entities of a limited number of peer initiatives that are presented for background information to the discussion of how to organize, manage, and lead New Orleans Medical District.

#### SELECTION OF PEERS

It always is difficult to find peer situations that are actual counterparts to any region's strategy. US peers of New Orleans Medical District include a very limited number of places actually styled as "medical districts" and several urban research parks that focus primarily on bioscience.

In this exercise, we selected peer projects because they have some mix of characteristics of potential relevance to New Orleans—summarized as follows:

Characteristic	St. Louis	Chicago	Memphis	Philadelphia	Cleveland
Complex Regional Strategy	X	X	X	X	X
Urban Site in a Major Urban Center	X	X	X	X	X
Multiple Universities and Health Care Institutions as Sponsors	X	X	X	X	X
Biosciences or Life Sciences is Entire (or Major) Focus	X	X	X	X	
Mature Strategy: (Bioscience Industry Cultivation)				X	
Mature Strategy: (Urban Redevelopment and Campus Improvements)		X		X	X

#### SOME OBSERVATIONS

- Chicago, Cleveland and Memphis are areas defined to include the actual institution campuses. In St. Louis and Philadelphia, the designated development areas are adjacent to university campuses. There are variations in means of defining "district," including the range of "powers," and services provided.
- Cleveland's purpose was urban revitalization and campus preservation and expansion, not biosciences industry development. It therefore includes many cultural and community organizations and does not have a research park component (yet). But it is a wonderful, mature example of institutionally-driven collaboration and long-range strategy for urban redevelopment.
- Philadelphia, being a mature bioscience technology park, is the best example of long-range industry growth, as well as mature organization functions (for an effort that has been in place about 50 years).
- All show variations of highly complex governance structures and multiple organization alliances across academic, institutional, public, and private sectors. Cleveland is primarily institution-driven. Chicago is publicly-dominated. There is a mix of 501(c)(3) organizations, formally empowered public or quasi-public authorities and "development districts," and related operating corporations.
- In several cases that include a large, representative Board structure, there is another group or another mechanism for decision-making by a smaller body.
- In Chicago, institutions do not directly control land. In Philadelphia, the Board is not institution-dominated. Business representation on boards is important to those that are pursuing bio industry.
- Financing is highly varied—from institutional contributions to state appropriations and commercial real estate financing. In truth, most strategies obtain funding from multiple sources, for various uses.

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## LEADERSHIP AND MANAGEMENT ORGANIZATION EXAMPLES

Illinois Medical District, Chicago, IL

### OVERVIEW

The Illinois Medical District (IMD) covers some 560 acres just to the West of Downtown Chicago. It is a State of Illinois Authority and has power to issue bonds and take property by condemnation. It was formed by the State Legislature in 1941, to help organize and provide for the future expansion of a number of medically-related entities within the area. It has a staff of eight reporting to the Chief of Staff.

The District includes four major medical centers, six hospitals and federal, state, county and city health and human service agencies. The District was created to provide its member institutions with the land and proper environment for medical research. Member institutions have substantial investments in the District in terms of facilities, financial investment, and human resources.

The Medical District supports institutions with \$220 million in research dollars and that employ some 20,000 people.

Though formed initially to assist in the expansion of medically-related institutions, the Illinois Medical District also has provided land and development incentives for a commercial shopping center and new, for-sale housing developments. The District has a Tax Increment Financing (TIF) designation, a federal urban Enterprise Zone designation and a federal Empowerment Zone designation. These three designations provide developers with tax and other incentives.

### MEDICAL DISTRICT MEMBER INSTITUTIONS

- City of Chicago
- Cook County
- John H. Stroger, Jr. Hospital of Cook County
- Rush University Medical Center
- State of Illinois
- University of Illinois Medical Center at Chicago
- Jesse Brown VA Medical Center
- Ruth M. Rothstein Cook County Bureau of Health Services
- Chicago Lighthouse for People Who are Blind or Visually Impaired.
- Hektoen Institute (Non profit research arm of Stroger Hospital)
- Illinois State Police Forensic Science Center at Chicago
- West Side Center for Disease Control – Chicago Department of Public Health

### ILLINOIS MEDICAL DISTRICT COMMISSION

All developments within the District must be approved by the IMD Commission which seeks the counsel of all its members before making decisions. This assures that new developments are compatible with the purposes and needs of the stakeholders.

There are no representatives of any medical institutions on the IMD's seven-person Commission. These members are appointed by the Governor, the Cook County Executive, and the Mayor of Chicago. IMD management comments that having a board unrelated to the institutions within the District has allowed the IMD *"the autonomy to do many good things and to pursue a broader mandate than if it were dominated by potentially competing medical institutions within its borders."*

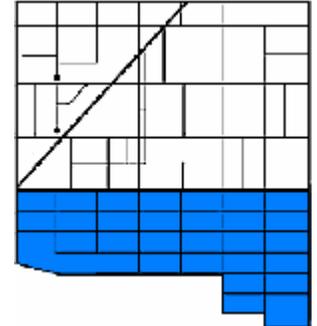
### DISTRICT MEMBER COUNCIL

There is another, separate entity created within the IMD legislation called the District Member Council (DMC). It is comprised of the IMD and voting members of each of the institutions within the IMD that control more than 500,000 SF of building space.

This small, but powerful group of Members meets once a month to discuss/solve “problems and challenges,” especially those among Members. Most of the issues discussed are operational and the meetings are described as “cordial.” All land use issues are decided by the IMD Board at its quarterly Commission meetings, though Members can provide information and points of view during the District Member Council Meetings.

### DISTRICT DEVELOPMENT AREA (DDA)

On the right is a map of the Medical District, with the white portion on the north representing the existing/developed IMD land, and the dark blue to the south as the new land the District has been accumulating for additional stakeholder development. It also will be used to provide sites for companies expanding out of the Technology Park. The DDA is being marketed to a mix of private industry, technology companies, research facilities and general administrative office uses.



### CHICAGO TECHNOLOGY PARK (CTP)

Located on 56 acres within the Illinois Medical District (IMD), the Chicago Technology Park (CTP) provides both incubator and company expansion space, including companies involved in drug discovery and delivery, medical devices and testing, genomics, nanotechnology and others who collaborate with the medical facilities within the District.

The Chicago Technology Park is also home to the Chicago-Illinois Technology Enterprise Center offices, a state-funded program designed to nurture and support technology-oriented entrepreneurs, and BiTmaP, a bioinformatics training program sponsored by the US Department of Labor.

More than 300 people work for companies in the incubator and another 125 work for companies that have moved to other locations within the Park. The Park has successfully graduated over 25 firms into the local economy. The average growth rate of the companies has been 200% in the past four years and employment has increased from 80 to 400 in the past five years.



Enterprise Center



Enterprise Center II

The Tech Park was created by the State Legislature within the IMD boundaries. Though the Park is a separate corporation, all of its assets are wholly owned by the Medical District. The Park is staffed by IMD personnel. The Tech Park board has nine members: five are appointed by the IMD, the other four represent two of the major stakeholder institutions—The University of Illinois at Chicago and Rush University Hospital. Reportedly, some have suggested that the Tech Park be given more autonomy, but that would require a change in the board makeup and there are no current plans to do so.

## FINANCING

The IMD's management operations are self-financing with revenues coming from land and building leases. It does not sell land. The Chicago Tech Park also is financed from IMD funds, though it has a small revenue stream from its incubators. When the IMD needs major funds for acquisition of land or buildings, it asks for a State appropriation.

Sources: Information from a telephone interview with Mich Hein, Chief of Staff, Illinois Medical District and the IMD website: [www.imdc.org](http://www.imdc.org)

## LEADERSHIP AND MANAGEMENT ORGANIZATION EXAMPLES

Memphis Medical District, Memphis, TN

### OVERVIEW

Memphis Medical District is a development sponsored by the State of Tennessee, University of Tennessee, City of Memphis, Memphis Regional Chamber of Commerce, the Baptist and Methodist Health Systems, large corporations and private bio-science companies. Included within its boundaries is the University of Tennessee-Baptist Research Park, planned for 10 acres of land formerly owned by Baptist Hospital.

### MEMPHIS BIOWORKS FOUNDATION

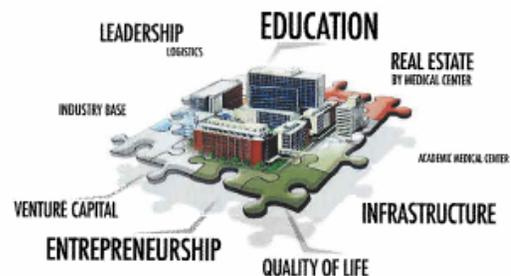
The major source of leadership and management is the Memphis BioWorks Foundation, a 501 (c)(3) entity composed of the largest employers, medical institutions, technology companies and political representatives of the region. It was formed in 2001 by a local entrepreneur and philanthropist to spearhead the establishment of Memphis as an international Bioscience Center and to develop the Research Park.

The Foundation has four responsibilities:

- Provide Program leadership
  - Bioscience growth
  - Branding
  - Communications
  - Direction
- Build Infrastructure
  - Facilities
  - Environment
  - Resources for businesses and entrepreneurs
- Grow the Workforce
  - Education
  - Outreach
- Drive Entrepreneurship
  - Foster research
  - Incubate new companies
  - Form business partnerships
  - Access to capital



**Baptist Memorial Hospital is a tertiary care teaching hospital affiliated with the University.**



The formation of the Foundation was generated by one entrepreneurial business leader who convinced the university, medical, business and governmental communities that Memphis would never be a major regional health sciences center unless it coordinated its actions through a single organization. As a result, the two major medical institutions, the Baptist and Methodist Health Systems, joined together to gain a \$25 million NIH grant to develop a bio-containment lab as the anchor for the Park and the District as a whole.

Besides the NIH grant, the Foundation also supported creation of the Memphis Academy for Science and Engineering, a charter high school, to begin to build a better qualified workforce for the new economy.

The Foundation, and its sister corporation, the Memphis BioWorks Development Council, work jointly with local government on housing and redevelopment issues affecting the District. Most recently one of the stakeholders, St. Jude Children's Research Hospital, converted one of its antiquated buildings into a residential development for employee housing.

## THE FOUNDATION'S BOARD

The board of directors of the Memphis BioWorks Foundation includes almost all of Memphis business, medical and governmental leadership. Below is a list of board members by institutional title/representation:

- President & Executive Director of BioWorks Foundation. Former International Paper Executive
- Immediate Past Chair, Board of Directors of Baptist Memorial Health Care Foundation
- Tennessee Health Foundation, Blue Cross Blue Shield of Tennessee
- Specialist Head and Neck Surgery, Board of Shelby County Medical Society
- Chair, UT Department of Orthopaedic Surgery
- President, Southwest Tennessee Community College
- Chair, Buckman Laboratories
- Chair, GTx Inc., public bio-tech firm
- CEO, Smith & Nephew (Trauma, Reconstructive, and Clinical Therapies
- President, Commercial Advisors, Chair of Memphis Tomorrow
- CEO, St. Jude Children's Research Hospital
- Chancellor, University of Tennessee Health Science Center
- Chair, Biometrics Therapeutics; former President, Smith & Nephew
- President, University of Tennessee
- CEO, Luminix Ventures
- President, University of Memphis
- President & CEO, Baptist Memorial Healthcare Corporation
- State Commissioner of Health
- President/CEO, Methodist Healthcare
- Memphis City Attorney
- Senior VP, Medtronics

## MEMPHIS BIOWORKS DEVELOPMENT COUNCIL

In its efforts to revitalize and redevelop the Medical District, Memphis BioWorks created a new organization, the Memphis BioWorks Development Council, through a partnership with the Memphis Regional Chamber of Commerce. The Council's responsibilities are:

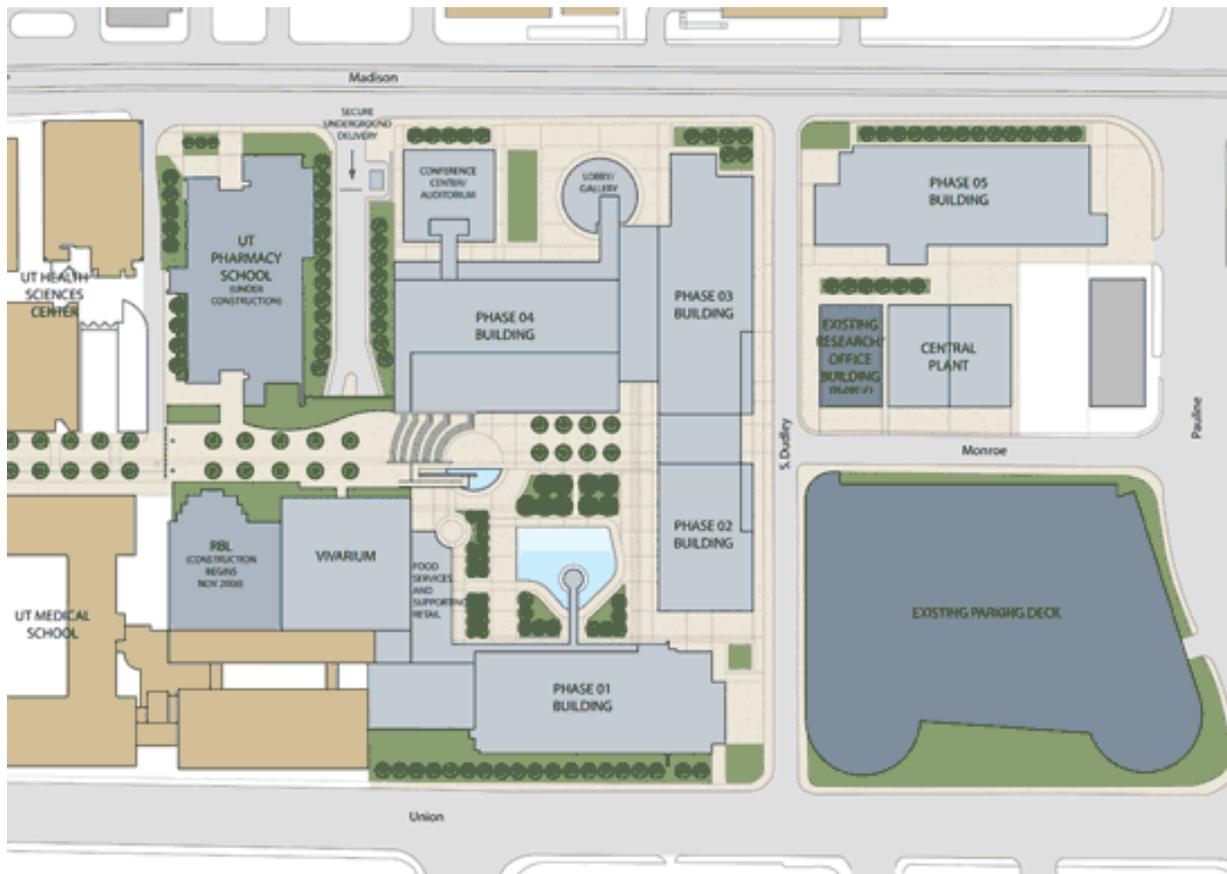
- Produce a catalog of existing resources
- Build the Memphis Bio brand
- Facilitate lead development
- Raise visibility of Memphis bio-science resources

The Council is composed of health and medically-related professionals and institutions. It provides a network for some 80 bio-science members, including 12 hospitals, and works with bio-science companies seeking sites and space within the District. It also provides assistance to local bio-science businesses with problems of location, financing, etc. It is a "pay-to-play" organization, with yearly dues running from \$1,500 to \$7,500. Those funds are being used to develop a marketing program for the Medical District. The Council also has funded trade missions to other regions in the south, seeking to bring more bio-science companies to Memphis.

There is yet a third group, composed of the medical institutions within the District, that works cooperatively on issues of vehicle access, parking, signage and other infrastructure issues.

Rendering of the Future UT-Baptist Research Park





Site Plan for University of Tennessee-Baptist Research Park

Sources: Information from telephone interview with Mike Demster, Executive Director, Memphis BioWorks Development Council and the websites of the Memphis BioWorks Foundation and the Memphis BioWorks Development Council:

[www.memphisbioworks.org](http://www.memphisbioworks.org)

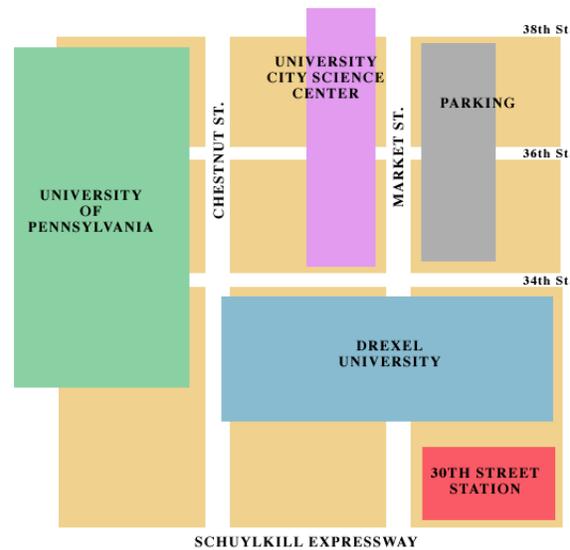
[www.memphischamber.com](http://www.memphischamber.com)

## LEADERSHIP AND MANAGEMENT ORGANIZATION EXAMPLES

University City Science Center, Philadelphia, PA

### OVERVIEW

The University City Science Center is one of the oldest research parks in the Nation and certainly the most successful urban research park in the US. Sited adjacent to the University of Pennsylvania campus, just west of downtown Philadelphia, the UCSC's growth has been tied almost directly to the growth of the University (UPenn). Though the UPenn main campus and its Health Sciences Center are not formally within the UCSC site, nor part of something formally designated as a "medical district," UPenn's adjacency, its own expansion, the adjacent development of the UCSC amount to a "virtual medical district," with many of the same characteristics of its peer institutions in Chicago and Memphis. UPenn is the largest shareholder of UCSC stock and has four of its members on the board of directors, including the Executive VP of its Health System.



### UNIVERSITY CITY SCIENCE CENTER CORPORATION



The Science Center was formed in 1963 as a 501(c)(3) entity. Although it is a not-for-profit, under Pennsylvania statute, its members are called "shareholders." Its purpose was to redevelop a deteriorated district the City of Philadelphia had decided to clear for urban renewal purposes. This 17 acres of land along Market Street and on UPenn's border (and now the home of 150 companies) was to become the single most copied urban research park in America.

In order to give the entity some needed political weight, the original incorporators of the Center approached various educational and medical institutions throughout the City and region to become part of UCSC as owners and board members. Today, the Center has 30 Members, including a number of hospitals, all owning some portion of the entity. Its two largest shareholders were and continue to be UPenn and Drexel University, the two closest institutions to the UCSC urban campus.

The Science Center's primary purpose is to form, finance and grow bio-science and technology companies within the Philadelphia region. To do so, it began by developing real estate and then branched out into providing small business assistance, in part through the Ben Franklin Partnership, and seed capital funding. Today, UCSC has helped to develop 1.7 million SF of real estate on Market Street; generated a \$10 million seed capital fund; and houses some 150 companies.

Over time, the Science Center began to set up various for-profit entities, as it became involved in the development of office and lab buildings in partnership with developers. As it added management of real estate over time, it also created a for-profit real estate management company, and further created other service and consulting companies that operate as for-profit entities.

Last fall, the Science Center broke ground for the first of five planned buildings that would double its office and lab space capacity to 3.5 million SF. Once again, UCSC is a limited partner in a for-profit development entity.

## UCSC BOARD

Though UCSC at one time had a board comprised of representatives of all of its 30 Members plus business and political representatives, it was finally deemed too unwieldy. Today the board has 25 seats, with 19 filled, with eight of them representing Member owners. The rest of the board represents various private business persons and business service professionals whose skills and expertise are necessary for an organization of such size and complexity.

The board has one Annual Meeting a year, at which time new directors are brought on board. It has four committees which meet as needed to make major decisions. The board approves the annual budget, land acquisitions/dispositions and contracts. The board is self-perpetuating, electing new members to fill the seats of those rotating off.

The board members by title/affiliations are below:

- Ballard, Spahr, Andrews & Ingersoll, LLP
- President and CEO, Children's Hospital of Philadelphia
- President, New Jersey Technology Council
- President and CEO, The Science Center
- President and CEO, True Product ID, Inc.
- Executive Vice President, University of Pennsylvania
- Managing Partner, New Spring Ventures
- President of Commercial and Investment Banking, Commerce Bank
- Vice Dean, Research and Research Training, University of Pennsylvania
- President, University of the Sciences in Philadelphia
- Vice President, Corporate Development, Johnson & Johnson Development Corporation
- President and CEO, The Wistar Institute
- Senior Partner, Heidrick & Struggles
- Attorney at Law
- Managing Partner, Quaker BioVentures, Cira Centre
- Vice Provost for Research, Temple University
- School of Engineering and Applied Science Center University of Pennsylvania
- Provost and Senior Vice President, Drexel University, Office of the Provost
- Executive Vice President, University of Pennsylvania for the Health System, Dean, School of Medicine

## UCSC BIOTECH COMPANIES

As the US's *most mature urban research park*, which has long had a major focus on biotech, University City Science Center is home to many biotech companies.





VECTOR BIOLABS



Sources: Information from EKA files and from UCSC web site: [www.sciencecenter.org](http://www.sciencecenter.org)

## LEADERSHIP AND MANAGEMENT ORGANIZATION EXAMPLES

University Circle, Cleveland, OH

### OVERVIEW

University Circle is a 550-acre, park-like concentration of nearly 50 cultural, medical, educational, religious, and social service institutions located at the eastern edge of Cleveland. The area takes its name from the trolley turn-around that in the late 18th century linked the campus with Cleveland's downtown.

In addition to the Case Western Reserve University, which is the largest institution in University Circle, the community includes Severance Hall, home of the world-famous Cleveland Orchestra; the Cleveland Museum of Art, housing one of the nation's finest collections; the Cleveland Institute of Music, the Cleveland Institute of Art; University Hospitals of Cleveland; the Western Reserve Historical Society; the Cleveland Botanical Garden; the Cleveland Museum of Natural History; the Cleveland Clinic, and many others.



The University Circle community, four miles east of downtown, went through a difficult period after WWII as the working class communities around it began to deteriorate. In 1957, the University Circle Development Foundation was founded by Mrs. William G. Mather. She also provided seed money to build a new Master Plan. One of the most important recommendations made in the 1957 Master Plan of University Circle was to "establish a central organization to administer the plan and give it some real authority." With that charge and full institutional support, the University Circle Development Foundation (UCDF) was formed as a "service organization to all institutions." Initial efforts focused on creating a **land bank** to purchase and hold available land needed by institutions for expansion. Soon, services that could be provided more efficiently if done collectively—parking, shuttle bus service, public safety, architectural review, and landscaping of common areas—were added.



Through the efforts of the Foundation, a slow improvement began as the new Master Plan was generally put into place. By 1994, there were 80 different member and associate member organizations in University Circle (or close by) that served the educational, medical, cultural and spiritual needs of Greater Cleveland.

Today, as a result of almost \$2 billion of infrastructure investment, with another billion dollars in the planning phase, places like Severance Hall, where the Cleveland Orchestra performs, already has been renovated as well as the Cleveland Botanical Garden, and a new housing district has been developed by Case Western Reserve University.

Other projects underway include a new heart center at the Cleveland Clinic; an expansion of the Cleveland Museum of Art by the architect Raphael Viñoly; a new wing at the Stokes Veteran's Administration Medical Center; a new cancer center at University Hospitals Health System; and a newly integrated arts and sciences high school campus for the Cleveland Public Schools.

A research park called "the Quad" by Case Western Reserve University is in the planning phase, as well as a renovation of the Cleveland Museum of Natural History, and other facilities, all in anticipation of 10,000 new jobs over the next 10 years.

Some officials say all of this activity provides an opportunity to begin turning around a city that was identified by the Census Bureau this year as the poorest big city in America for the second time in the last three years.

## UNIVERSITY CIRCLE, INC.

In 1970, the University Circle Development Corporation was reorganized as University Circle Incorporated (UCI) with an added emphasis on strengthening the relationship between University Circle and its surrounding neighborhoods. In its outreach to the broader community, UCI began working closely with neighborhood organizations to build housing and to provide access to broader community resources. It also began to champion new investments in the area and, with its 40 non-profit member institutions, it now acts as the development, service, and advocacy organization for the area.

Today, UCI provides its own police department, real estate management and financing operations, including owning and managing a number of rental properties throughout the area. The Circle Police Department is supported by voluntary donations from the UCI membership.

UCI also manages a number of other services, special neighborhood events and other activities in the Circle area and is supported by 80 sources of grants and donations that make up a major portion of its budget.

University Hospitals, along with its partners at Case Western Reserve University, comprise the largest concentration in bio-science in Ohio.



## UCI MEMBER INSTITUTIONS

- Ambleside Towers
- American Cancer Society – Hope Lodge
- American Heart Association
- Case Western Reserve University
- Centers for Dialysis Care
- The Children's Museum of Cleveland
- The Church of the Covenant
- Cleveland Botanical Garden
- Cleveland Friends Meeting
- Cleveland Hearing & Speech Center
- Cleveland Hillel Foundation, Inc.
- The Cleveland Institute of Art
- The Cleveland Institute of Music
- Cleveland International
- Piano Competition
- The Cleveland Museum of Art

- The Cleveland Museum of Natural History
- Cleveland Music School Settlement
- The Cleveland Public Library
- Cleveland Sight Center
- Cleveland Student Housing Association
- Cuyahoga County Coroner's Office
- Epworth-Euclid
- United Methodist Church
- Fine Arts Garden Commission
- The Free Clinic of Greater Cleveland
- Gestalt Institute of Cleveland
- Hallinan Center
- Judson at University Circle
- The Junior League of Cleveland, Inc.
- Magnolia Clubhouse
- Maximum Independent Living
- The Mt. Sinai Health Care Foundation
- Mt. Zion Congregational Church
- Musical Arts Association
- Cleveland Orchestra
- Pentecostal Church of Christ
- Ronald McDonald House of Cleveland, Inc.
- The Sculpture Center
- The Temple-Tifereth Israel
- University Circle Housing, Inc.
- University Hospitals of Cleveland
- The Western Reserve Historical Society

The current board of trustees numbers over 100 and is unwieldy for effective management. Because this board only meets twice a year, the organization has created a 30-member Executive Committee that oversees the major business and policy issues facing the organization. It meets six times a year. For day to day matters, the five officers meet every month with staff to keep up with the many programs and functions of the organization and to deal with emergencies. This three tiered management system has evolved, over time, as a pragmatic response to the over-large board of trustees.

## FINANCING

UCI's annual budget is \$8 million and it has an additional endowment of more than \$14 million. It does not have a legally-imposed geographical area, such as a Downtown Improvement District, which can impose a tax levy to fund its work. Most of UCI's funding is voluntary and comes from foundation grants, business donations and private contributions. The City of Cleveland provides some grant funds as well. UCI also receives income from its rental properties and vacant development sites it currently uses for paid parking lots. It has a fund-raising position on its staff whose job it is to generate grant requests to various entities, including foundations and government.

The University Circle Police Department and its 25 officers are separately funded by the 40 members within the original geographical boundaries of University Circle. Yearly contributions run from \$1 million for Case Western Reserve University to \$1,500 for a small, one office institution.

Sources: Information through telephone interview with Daniel Stahura, University Circle, Inc. and the University Circle, Inc. website: [www.universitycircle.org](http://www.universitycircle.org)

## LEADERSHIP AND MANAGEMENT ORGANIZATION EXAMPLES

CORTEX and Center for Emerging Technologies, St. Louis, MO

### OVERVIEW

In St. Louis, several organizations are involved, in various ways, in elements of the region's Plant and Life Sciences strategy. A list is provided below.

The biomedically-focused part of the regional strategy is centered primarily in the Midtown St. Louis area—an urban redevelopment area west of the Central Business District and adjacent to the primary health sciences assets of Washington University School of Medicine, BJC Health System, and Saint Louis University. (Map in the packet shows this physical location and physical relationships.

Another major node of regional activity is the Donald Danforth Plant Science Center and the NIDUS Center for Scientific Enterprise—both more focused on the Plant Science element of the regional strategy and located in St. Louis, but closer to the county/suburbs than to central St. Louis.

As the dual Board list below illustrates, there are some key persons who serve on both the CORTEX and CET governing boards. As these initiatives are complementary elements of a single, unified biomedical science strategy for Midtown St. Louis, work is currently underway to clarify further a joint Market Strategy and to develop new elements of collaborative marketing activities.

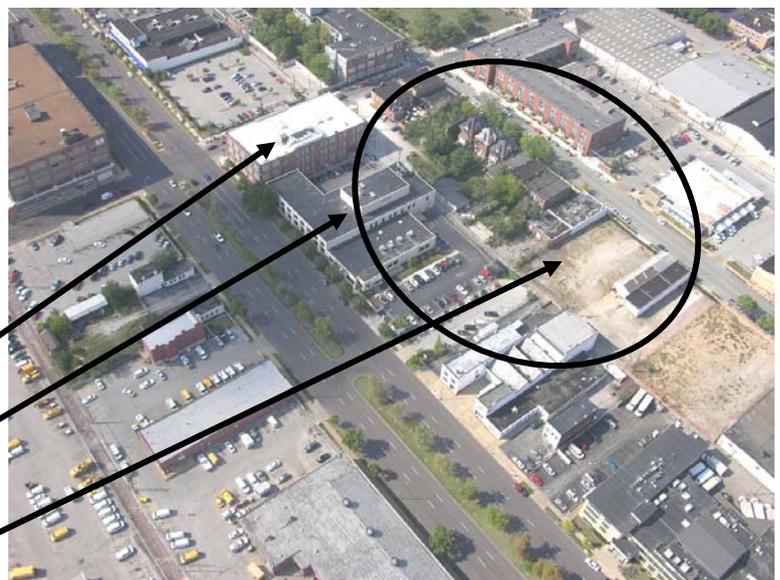
### Center for Emerging Technologies

Founded in its present form in 1996, this is a 501(c)(3) entity with a self-perpetuating Board that includes representatives of the major institutions, government, and the private sector. Although an independent not-for-profit corporation, the Center (or CET) is affiliated with the University of Missouri-St. Louis (UMSL) which provides management, accounting, and various other services. (UMSL's campus is not located within the Midtown area where the Center, CORTEX and the other two universities are located.)

The CET's mission is to provide commercialization and innovation and enterprise development support and facilities—primarily for companies in biomedical / biosciences disciplines. It operates two buildings, one with wet lab space and both with some shared facilities for conferences and training. These are on Forest Park Avenue, along one boundary edge of the CORTEX Redevelopment District, and between WUSM/BJC and Saint Louis University campuses.

Planning is now underway for a third building, which also will be the first new building for the Center.

In addition to the main 501(c)(3) entity, the Center's governance structure includes two related for-profit entities through which the Center's functions in real estate management and equity participations are accomplished. The Center's Board or staff essentially controls these entities.



CET Building I

Approximate Study Area for Expansion

CET Facilities and Study Area for Next Phase

## CORTEX

CORTEX was formed as an entity in 2002 to be the development sponsor of the CORTEX redevelopment initiative. CORTEX is the acronym for Center Of Research, Technology, and Entrepreneurial Exchange, which is a 501(c)(3) corporation, whose founding members are: Washington University, Saint Louis University, University of Missouri-St. Louis, BJC Health System, and Missouri Botanical Garden. There is an affiliated for-profit entity, St. Louis Land Company, LLC, through which land transactions are conducted.

There are two areas designated as CORTEX West (near WUSM and BJC) and CORTEX East (near Saint Louis University). A related corporation, CORTEX West Redevelopment Corporation, is a Chapter 353 redevelopment corporation to which the City has granted development rights and rights of eminent domain and tax abatement for CORTEX West—a 179-acre area.

The CORTEX governance structure also includes related corporate entities. For example, each building that CORTEX develops directly is and will be a single-asset LLC, such as CORTEX West Development I, LLC.

## FINANCING

### Center for Emerging Technologies

Basic operating funding for the Center’s staff and programs is provided by annual grants from the State of Missouri; from UMSL; and to some extent from operating and grant revenues.

Building I was acquired and renovated for the Center’s use by a combination of City funds (via St. Louis Development Corporation, as owner), US EDA, and private funds the Center raised. Building II was acquired and renovated via a partnership of the Center with a private developer / owner. Missouri tax credits were a significant element in that financing. The Center operates both facilities.

The Center is in early stages of planning to raise capital for its next building—currently assumed to be a mix of federal, state, and private sources.

## CORTEX

Initial funding for CORTEX was in the form of equity commitments of the founding members in the amount of \$29 million. This funding is primarily for the critically important land acquisition program.

Financing of CORTEX I included a US EDA grant, New Markets Tax Credits loans, and commercial financing from Bank of America.

CORTEX, like CET, also pursues grant funding. One such grant is for intermodal transportation planning. CORTEX expects to generate modest returns on its real estate holdings and investments, in large part as a result of private development it will induce.

A possible source of forthcoming state money may be an allocation included in a state plan to sell a portion of its student loan portfolio (MOHELA). If this is approved, there is some funding intended for both CORTEX and CET included.

CORTEX I

Site of New CORTEX Facility for Solae, Inc.



As a special challenge to be addressed, CORTEX West Redevelopment Area includes a still-functioning grain elevator (upper far right in photo)

**CROSSWALK OF CORTEX AND CET BOARD MEMBERSHIPS**

The following chart shows institutional and personal

CORTEX Board	Affiliation	CET Board
	<i>WASHINGTON UNIVERSITY</i>	
William Danforth Chancellor Emeritus, Washington University		
Mark Wrighton Chancellor, Washington University		Christopher I. Byrnes, Chair Emeritus Former Dean Engineering & Applied Sciences
Richard Roloff Executive Vice Chancellor, Washington University		Dr. Bill Peck Former Dean of Medicine, Director, Center for Health Policy, Washington University and CEO, Innovate St. Louis & Venture Mentors
		Dr. Larry Shapiro Executive Vice Chancellor & Dean School of Medicine, Washington University
		Dr. Samuel Stanley Vice Chancellor for Research Washington University
	<i>SAINT LOUIS UNIVERSITY</i>	
Father Lawrence Biondi President, Saint Louis University		
Kathleen Brady VP for Facilities & Civic Affairs Saint Louis University	<b>Both Boards</b>	Kathleen Brady VP for Facilities & Civic Affairs Saint Louis University
William Kauffman General Counsel, Saint Louis University		Maurice Foxworth Tech Transfer Office, Saint Louis University
	<i>UMSL</i>	
Dr. Tom George Chancellor, UMSL	<b>Both Boards</b>	Dr. Tom George Chancellor UMSL
Dr. Nassar Arshadi Vice Chancellor for Research, UMSL	<b>Both Boards</b> (on CORTEX Real Estate Committee)	Dr. Nassar Arshadi Vice Chancellor for Research, UMSL
		Dr. Blanche M. Touhill Chancellor Emeritus UMSL
	<i>MO BOTANICAL GARDEN</i>	
Peter Raven Director, Missouri Botanical Garden		
Robert Herleth Deputy Director, Missouri Botanical Garden		
	<i>CORTEX</i>	
John Dubinsky President CEO, Westmoreland Associates	<b>Both Boards</b>	John Dubinsky President CEO, Westmoreland Associates
Lewis Levey Chairman, Enhanced Value Strategies, Inc		
	<i>BJC HEALTHCARE</i>	
Robert Cannon Vice President Capital Asset Management, BJC HealthCare		
Steven Lipstein President & CEO, BJC HealthCare		

	<b>NON-PROFIT ADVOCACY ORGS</b>	
Tom Irwin Executive Director, Civic Progress		
Richard Fleming President & CEO, St. Louis RCGA		
Donn Rubin Executive Director, Coalition for Plat & Life Sciences		
	<b>CITY OF ST. LOUIS</b>	
Joe Roddy Board of Alderman, City of St. Louis		
Rodney Crim Executive Director St. Louis Development Corporation		Patrick Bannister Director, Economic Development St. Louis Development Corporation
	<b>CORPORATE</b>	
		Dr. C.E Anagnostopoulos Chairman, MetaPhore Pharmaceuticals
		John W. Bachmann Senior Partner, Edward Jones
		Kenneth Bender Retired Vice President Information Services, SBS
		F. Gilbert Bickel, III Sr. VP, Wealth Advisor, Morgan Stanley
		Dr. Brian Clevinger Managing Director, Prolog Ventures
		Jeffrey McDonnell Vice President, J & J Management Services
		Rick Oertli CEO, Guarantee Electrical Co.
		Jeffrey Peterson Vice President Strategic Negotiations, Monsanto
		Steven C. Roberts Pres. & COO, Roberts Companies
		John Shapleigh President, Double Eagle
		Dr. Davis Smoller Vice President of R&D Sigma-Aldrich Biotechnology
		Michael Turley Member, Lewis Rice & Fingersh
	<b>PHILANTHROPIST</b>	
		Desmond Lee President, Des Lee Collaborative
	<b>STAFF</b>	
Marcia Mellitz President & CEO Center for Emerging Technologies	<b>Both Boards</b>	Marcia Mellitz President & CEO Center for Emerging Technologies
Barbara Featherston Executive Director, CORTEX		Bill Simon, VP & COO
		Michele Rutledge, VP for Resource Devel. Barbara Enneking, VP for Enterprise Devel.

## ORGANIZATIONS IN ST. LOUIS REGION ENGAGED IN THE PLANT AND LIFE SCIENCES STRATEGY

A number of organizations, directly or indirectly, play roles in the St. Louis region's Plant and Life Sciences strategy.

### CORTEX (Center for Research, Technology and Entrepreneurial Exchange)

[www.cortexstl.com](http://www.cortexstl.com)

Founded by Washington University, Saint Louis University, University of Missouri – St. Louis, BJC HealthCare and the Missouri Botanical Garden to create a thriving life sciences district in Midtown St. Louis.

### Center for Emerging Technologies (CET)

[www.emergingtech.org](http://www.emergingtech.org)

A not-for-profit entity organized in 1995 to develop specialized services and facilities that accelerate the growth of biomedical and other advanced technology companies and support the development of life sciences in the St. Louis region.

### Nidus Center for Scientific Enterprise

[www.niduscenter.com](http://www.niduscenter.com)

A life science incubator developed and funded by Monsanto, which specializes in plant science companies and provides services such as assistance with business planning, advisory boards, mentoring, negotiations, management building assistance, intellectual property protection and access to capital.

### Washington University

[www.wustl.edu](http://www.wustl.edu)

Private university consistently ranked in the top 10-20, with School of Medicine in the top five in rankings and NIH funding. One of three US lead centers in sequencing the human and now the cancer genome, comprehensive cancer center, particular strength in imaging, biomedical engineering and neuro science.

### Saint Louis University

[www.slu.edu](http://www.slu.edu)

Founded in 1818, it is the oldest university west of the Mississippi and the second oldest Jesuit university in the United States. The Medical Center at Saint Louis University the only school of public health in Missouri, major research in viral vaccines, and very soon, a state-of-the-art research building.

### University of Missouri – St. Louis

[www.umsl.edu](http://www.umsl.edu)

Public university which has educated the highest number of workers in the region. Special programs include the nationally recognized Center for International Business, Center for Tropical Ecology, joint Washington University-UMSL engineering program, newly named Center for Nanotechnology and School of Optometry. In addition to sponsorship of CET and CORTEX, has a research park which includes the headquarters for Express Scripts.

### BJC HealthCare

[www.bjc.org](http://www.bjc.org)

One of the largest nonprofit health-care organizations in the United States, with net revenue of \$2.6 billion, BJC includes 13 hospitals and multiple community health locations. In St. Louis, Barnes-Jewish Hospital and St. Louis Children's Hospital are national models in patient advocacy, clinical quality and medical research.

### Donald Danforth Plant Science Center

[www.danforthcenter.org](http://www.danforthcenter.org)

Research to enhance the nutritional content of plants to improve human health, increase agricultural production to create a sustainable food supply, and provide the scientific ideas and technologies, in collaboration with researchers at the University of Illinois at Urbana-Champaign, the Missouri Botanical

Garden, the University of Missouri-Columbia and St. Louis, Monsanto Company, Purdue University, and Washington University in St. Louis.

### **The Coalition for Plant and Life Sciences**

Established to execute the recommendations of the Battelle report on creating a life science industry in St. Louis, this group has representatives from the region's academic institutions, business and civic leaders. Committees have focused on the creation of commercial R&D facilities, capital formation and creating a national agency for agriculture research.

### **Innovate St. Louis**

Chartered by business, civic, university leaders, and the RCGA, Innovate St. Louis is designed to enhance the region's entrepreneurial environment and to catalyze the emergence of the St. Louis region as a global hub of innovation and entrepreneurship.

### **BioGenerator**

[www.biogenerator.org](http://www.biogenerator.org)

Established to create biomedical companies from university and other technology, the Board includes tech transfer officers from Washington University and Saint Louis University, and the presidents of CET and the Nidus Center. Funding was provided primarily by the Danforth Foundation, McDonnell Family Trust and Monsanto.

### **St. Louis Arch Angels**

[www.stlouisarchangels.com](http://www.stlouisarchangels.com)

Provides opportunities for members to obtain outstanding financial returns by investing in early-stage companies with high growth potential in the St. Louis Region and accelerating them to market leadership by targeting an investment range that is generally underserved by institutional venture capital firms.

### **RiverVest Venture Partners**

[www.rivervest.com](http://www.rivervest.com)

RiverVest Venture Partners® is a venture capital firm investing nationwide in emerging medical device, biopharmaceutical and other healthcare opportunities. The RiverVest team applies strong operational experience and proven financial and technical expertise to collaborate with the entrepreneurs building tomorrow's leading life sciences companies.

### **Prolog Ventures**

[www.prologventures.com](http://www.prologventures.com)

Firm possesses technical understanding of scientific issues, entrepreneurial backgrounds in starting and growing successful companies, and in-depth knowledge of the region's resources to assist portfolio companies in refining strategy, sharpening execution, and building relationships.

### **Advantage Capital Partners**

[www.advantagecap.com](http://www.advantagecap.com)

Provides capital and value added services to well-managed companies with superior growth potential located in geographic areas where little venture capital or venture capital infrastructure exists. The company also provides senior debt, mezzanine debt and equity capital to exceptional real estate development firms and real estate projects.

### **St. Louis Development Corp. (SLDC)**

<http://stlouis.missouri.org>

An umbrella, not-for-profit corporation organized under Chapter 355 of the Missouri State Code with the mission of fostering economic development and growth in the City of St. Louis through increased job and business opportunities and expansion of the City's tax base. SLDC is directed by its own Board of Directors, and its employees serve as staff support for the City's seven economic development authorities.

**RCGA (St. Louis Regional Chamber and Growth Association)**

[www.stlrcga.org](http://www.stlrcga.org)

Connects business and civic communities in the 16-county, bi-state region, supporting public policy and infrastructure initiatives, attracting new jobs, capital and talent. Focus areas are economic development, including life science business development, entrepreneurial activities and capital formation; chamber activities; and regional public policy.

**CWE (Central West End) Midtown Community Development Corp.**

A taxing district that covers the Central West End and Midtown areas of St. Louis City and is focused on community improvement for the area. The academic institutions are contributors and are represented on the governing board.

In addition, the following organizations are participating in the New Orleans Medical District visit.

**Stereotaxis**

[www.stereotaxis.com](http://www.stereotaxis.com)

Magnetic-guided system enabling physicians to safely and remotely perform computerized catheter-based cardiac and other interventional procedures. Physicians are able to conduct these procedures remotely from a control room adjacent to the patient lab, or cath lab, and outside the x-ray field that is used for all types of interventional procedures.

**Kereos**

[www.kereos.com](http://www.kereos.com)

Develops targeted therapeutics and molecular imaging agents designed to detect and treat cancer and cardiovascular disease earlier and more specifically than previously possible. Targeted therapeutics seek out definitive disease biomarkers and carry powerful payloads of proven chemotherapeutics with specificity and potency that make them potentially more effective and less toxic in treating disease.

**Siteman Center of Cancer Nanotechnology Excellence**

[www.siteman.wustl.edu](http://www.siteman.wustl.edu)

At the forefront of advancing nanomedicine technology with the unique composition of their nanoparticle that allows them to attach not only homing molecules but also a large number of imaging molecules. The result is a signal that "lights up" the targeted cells. This strong illumination means the nanoparticle has great potential for spotting disease sites at an early stage, when treatment may be most effective, particularly cancer and heart disease.

Sources: Barbara Featherston, CORTEX; Marcia Mellitz, Center for Emerging Technologies; and Information in EKA files.