AGENDA

Special Meeting
Council on Postsecondary Education
October 17, 2007

1 p.m. (ET)
CPE Meeting Room A, Frankfort, Kentucky

Page

CPE meeting materials are available on the Council Web site at http://cpe.ky.gov/about/cpe/meetings/.

Council on Postsecondary Education
October 17, 2007

Kentucky's Double the Numbers Plan

The long-term goal of the *Kentucky Postsecondary Education Improvement Act of 1997* (HB 1) is to reach a standard of living and quality of life equal to or better than the rest of the nation. The Double the Numbers Plan articulates what the postsecondary system will do to achieve this goal and what this will mean for the average Kentuckian.

The plan takes the broad directive of HB 1 and boils it down to a concrete goal: Kentucky will double the number of bachelor's degree holders in the state, from 400,000 in 2000 to almost 800,000 in 2020. The plan focuses on bachelor's degree production because of the strong correlation that exists between bachelor's degree attainment and economic prosperity, both for states and for individuals. However, the plan acknowledges the importance of associate and advanced degrees, and reaffirms that the postsecondary system will continue to pursue other statewide and institutional goals.

The first part of the plan advances five essential strategies that must be urgently advanced at the statewide level:

1. Raise high school graduation rates.
2. Increase the number of GED graduates and transition more to college.
3. Enroll more first-time students in KCTCS and transfer them to four-year programs.
4. Increase the number of Kentuckians going to and completing college.
5. Attract college-educated workers to the state and create new jobs for them.

Each strategy highlights some of the tactics that will be used to pursue the goal, as well as statewide targets to be reached by the year 2020.

The second part of the plan examines what achievement of the goal could mean for each of the university's areas of geographic responsibility, and establishes 2020 regional targets for each of the five strategies. The role of KCTCS and the Association of Independent Kentucky Colleges and Universities (AIKCU) also is explained.

The Double the Numbers Plan is ambitious, but attainable if we work together and accelerate our efforts.

Staff preparation by Melissa McGinley

Council on Postsecondary Education
October 17, 2007

Postsecondary Education
2008-10 Discussion Budget

An updated version of the Postsecondary Education 2008-10 Discussion Budget will be presented by Council staff at the October 17 meeting.

The major components of the presentation will include:

- Overview: Background information to provide context for Discussion Budget
- Operating Budget: Funds for public postsecondary education institutions
  - Tuition and fee revenue
  - Maintenance of ongoing operations / base adjustments
  - Strategic investments (developmental education, access to KCTCS, and other statewide priorities)
  - Summary of total public funds
- Degree Production Performance Funding (Double the Numbers)
- Endowment Match Program (Bucks for Brains)
- Capital
  - Capital renewal
  - Space adequacy and major renovations
  - New and expanded educational and general facilities and postsecondary education centers
  - Research and economic development projects
  - Information and technology initiatives
- Agency: Statewide coordination
  - Council operations
  - Kentucky Adult Education
  - Kentucky Virtual Campus and Virtual Library
  - Pass-through programs
  - Statewide strategic investments
    - College preparation, extension, and outreach
    - Developmental education
    - Transfer
    - Science, technology, engineering, and mathematics (STEM) initiatives
    - Information and technology

Staff preparation by John Hayek

2008-10 Discussion Budget

Kentucky Council on Postsecondary Education

October 17, 2007

Bradford L. Cowgill
John Hayek
Sherron Jackson

Agenda

- ✓ Overview (Cowgill)
- ✓ Institutional operating budget (Hayek)
  - Questions
  - Break
- ✓ Institutional capital budget (Jackson)
  - Questions
- ✓ Agency budget (Hayek)
  - Questions

A discussion budget

- ✓ A work paper (not a policy statement or decision).
- ✓ Produced by staff with CBO's, not the Council.
- ✓ Facilitates further discussion; targets needed info.
- ✓ Much work remains to be done.

College readiness/developmental education

Remedial education needs examined

By Art Jester
HERALD-LEADER STAFF WRITER

FRANKFORT - A special committee urged the state yesterday to reduce its costly burden of remedial education and strengthen students' preparation for college.

The Task Force on Developmental Education, appointed by the state Council on Postsecondary Education, issued six recommendations:

Darrell Lovitt/Staff

on Developmental Education
lege preparedness yesterday.
Westwood, R-Crescent
esident of the Council on
nd Rep. Harry Moberly,
cument.

Many still unprepared for college

Critics want changes in state remediation

By Mark Pitsch
mpitsch@courier-journal.com
The Courier-Journal

FRANKFORT, Ky. — First-year Kentucky college students who left high school prepared to do college-level work were increasingly likely to return for their second year, a new state study shows.

And students not ready for college work were more likely to drop out despite taking classes there designed to help them catch up, according to the study released yesterday by the Council on Postsecondary Education.

Overall, 53 percent of first-year students entering Kentucky's public colleges and universities in 2004 were not prepared, compared with 54 percent of those entering in 2002.

The results prompted at least one lawmaker to call for schools and colleges to be held accountable for lowering remediation rates.

Others said high schools and colleges need to work together so that college admission requirements and high school coursework match.

ON THE WEB

Read the story at www.courier-journal.com/education to share your thoughts and find a link to the Kentucky Council on Postsecondary Education.

High schools and colleges should be financially rewarded or punished, depending on how well they prepare students and keep them enrolled, said state Rep. Harry Moberly, D-Richmond, the house budget committee chairman and a member of a state task force on remedial education.

"There has to be more done by higher education to reduce remediation. They provide the teachers. They need more partnerships with the schools," Moberly said.

Jessica Verzone, 21, a Kentucky State University freshman from Mobile, Ala., who earned a high school equivalency certificate in Kentucky, said she scored poorly on the math part of the ACT college entrance exam and is taking remedial math.

"It's a refresher course on eighth-grade math," Verzone said. "You know how people are dyslexic. I'm like that with numbers. I get them all mixed

See **REMEDIAL**, B6, col. 1

Degree production and productivity

HIGHER ED | Only one in three Ky. adults has a bachelor's degree

By 2030, there will be 35 million more jobs in the United States than people to fill them, said Tom Zawacki, general manager of Toyota Motor Manufacturing Kentucky in Georgetown.

The way to obtain skills for those jobs is to earn a two-year or four-year college degree, speakers said.

"The skills necessary to be successful in the workplace are identical to the skills you need to be successful in college," said Michael McCall, president of the Kentucky Community and Technical College System.

McCall said two-thirds of the 2 million members of Kentucky's adult population ages 19 to 54 do not have a bachelor's degree. Of that group, only 14 percent are seriously

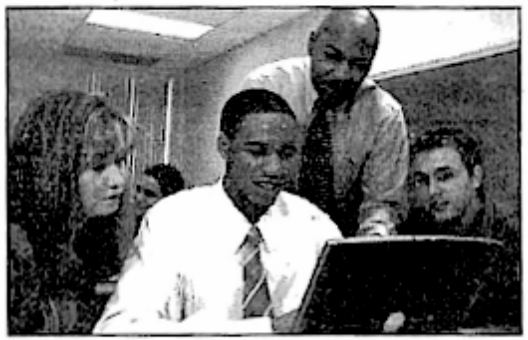
Coalition Seeks to Point More Toward College

'KentuckyCAN' Will Promote Education Beyond High School

The Prichard Committee and Kentucky's Council for Postsecondary Education recently launched a new effort to get more students, parents, and adults focused on earning a college degree.

The new Kentucky College Access Network, created in August, will work to coordinate existing efforts to promote postsecondary education and seek new ways to promote college-going. The groups will use a $500,000 grant from the Indianapolis-based Lumina Foundation to build the KentuckyCAN program.

Joe McCormick, the executive director of KentuckyCAN, said the first step has involved taking stock of programs already pointing teens and adults toward college. KentuckyCAN will work to build a stronger coalition among those groups and at the same time look for gaps in current efforts. "We hope to discover new ways



Students at Western Kentucky University in Bowling Green work with a professor in a business course. (WKU Photo)

See **KentuckyCAN**, Page 4

STEM education and careers

State task force approves steps to ease 'crisis' in science, math

By Art Jester
HERALD-LEADER STAFF WRITER

A statewide task force approved eight recommendations yesterday to address what it called a "national crisis" in science and mathematics that is damaging the United States' ability to compete in a global economy.

The Science, Technology, Engineering and Mathematics Task Force, appointed by the state Council on Postsecondary Education, released its proposals at Tates Creek High School.

"I can't say how glad I am to see Kentucky taking these problems seriously," said University of Kentucky President Lee T. Todd Jr., chairman of the 110-member task force. "There's no state doing this right, right now."

STEM's recommendations were:

■ Launch a statewide campaign to increase public awareness of the urgency of the science and math problems and how they affect the state's economy.

■ Create incentives, including extra pay for teachers in math, science and related fields, so students, teachers and schools will be encouraged to improve learni
fields.

■ Intensify pro
velopment for ma
ence teachers base
on rigorous nation
national standards.

■ Improve tea
tion programs to
people with degree
math and related
come teachers.

■ Encourage b
dustry and civic le
prove education i
ence and related fi
ative incentives fo
businesses to emp
educated in those f

■ Develop a
statewide effort a
agencies, schools,
universities to ma

Get the report

The 34-page STEM task force report, "Kentucky's STEM Imperative: Competing in the G
Economy," is availabl
http://cpe.ky.gov and
der "Featured Links"
to: Kentucky Council
ondary Education, 10
Center Drive, Suite 3
Ky. 40601; or by calli
573-1555.

tucky's ability to attract jobs in science, math and related fields.

■ Establish energy sustain-

Science, math improvements crucial to state, report says

Education, business partnerships urged

By Nancy C. Rodriguez
nrodriguez@courier-journal.com
The Courier-Journal

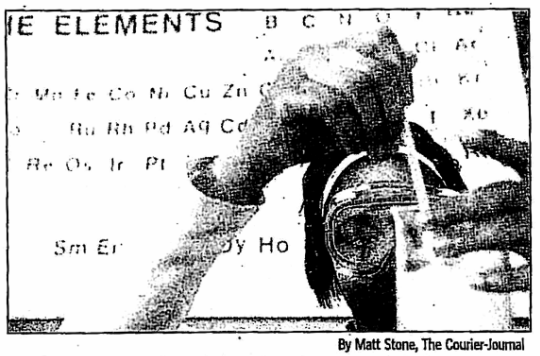
Kentucky must create and attract more scientists, mathematicians and engineers to effectively compete in an increasingly global economy, some of the state's top higher education leaders say.

That means finding more state and private money to pay for everything from new lab equipment and scholarships to revamping the way the state recruits, trains and pays math and science teachers, they say.

It also means more partnering between schools and universities and business, and a state public relations campaign urging students to pursue careers in science and math education.

Without those efforts, the state risks falling farther behind in science and technology, according to a report issued by the Kentucky Council on Postsec-

See **REPORT**, A2, col. 1



By Matt Stone, The Courier-Journal

Jamaica Cooper, a junior at Ballard High School, conducted an experiment in Gil Downs' chemistry class at Ballard High School.

Adult education

McDonald's/Kentucky Adult Education encourage GED attainment

By SUSAN WHEELDON
CJ Staff Writer

"It's one of the best things in my life I feel like I've achieved," said Jerry Waddle.

Recently he and another local resident, Melissa Galloway, achieved their GED with the help of the Pulaski Adult Education Center.

Waddle went to the Adult Learning Center after he was out of a job, following Crane's closing after working at the factory for many years.

"I really wanted to go back as soon as I got out of work," said Waddle, noting he wanted his daughters who were sitting and doing homework in the evenings, to know he had his GED. "When Crane went out I thought I'd better make the best of it."

Waddle said he worked at it for several hours each day and several more hours each night studying and doing work, during the time he was working towards getting his GED.

"If it hadn't been for them, I wouldn't have achieved what I did," said Waddle of the Adult

However, for those people who need to get their GED he said any person, if they set their mind to it, can do it.

For Galloway who has three daughters, she said finding time to study is nearly impossible as they come first for her.

"You can't raise a family well on a minimum wage job. That's the bottom line," said Galloway, "there are no extras."

However, to get her GED she had to sacrifice, but after many years of not having the "extras" she thought the sacrifice was worth it.

"I sacrificed a lot with this," said Galloway. "I had to cut my hours in half during the time I was working for it."

Now, she has set a goal to begin attending college classes come the spring semester at SCC. Galloway was in a special program which connected her to the college during the time she was getting her GED and said to find out about any special programs people should call the local adult learning center.

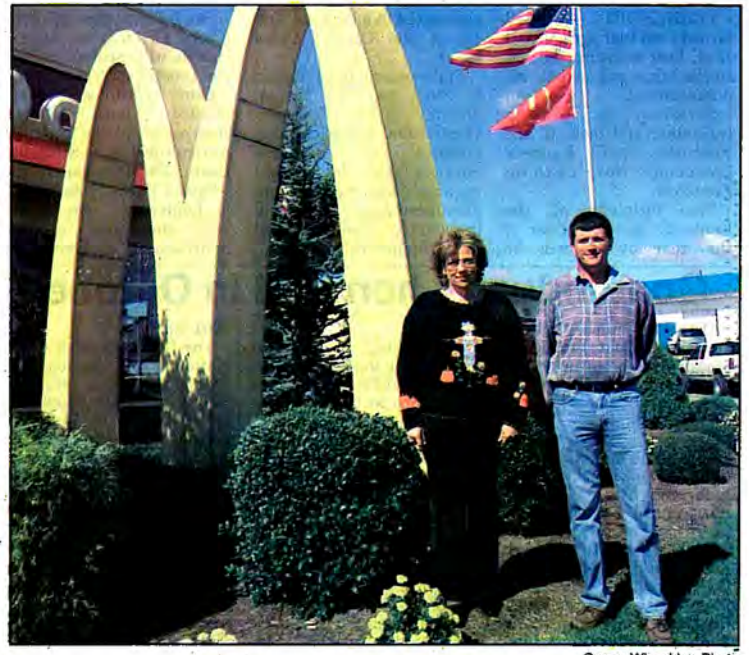
On average around 90

by Kentucky Adult Education, a unit of the Council on Postsecondary Education, to raise the educational attainment of adults in the Commonwealth.

"It's critical to Kentucky's economic and workforce development efforts that we continue to raise educational attainment for all Kentucky adults," said Sarah Hindman Hawker, vice president for Kentucky Adult Education. "This campaign has the potential to change the lives of individuals who are motivated to earn a GED, which is the gateway to continuing education, better jobs and higher earnings."

Adult education centers in every Kentucky county provide free GED classes, workforce education, family literacy and English as a second language and literacy services. To find the center in your county, call Kentucky Adult Education at 1-800-928-7323 or visit www.kyae.ky.gov.

The local center offers classes including Adult



Susan Wheeldon Photo

Jerry Waddle and Melissa Galloway stand in front of McDonald's which recently partnered with Kentucky Adult Education to encourage GED attainment. Through the partnership they used traylIners and bagstuffers with a "GED — Prove Yourself" on them featuring Kentucky GED graduates.

Affordability and access

Many college students are heading toward a life of debt

By William Trombley
Senior Editor

FOR MILLIONS of college students who depend on federal loans to pay college bills, the recent news from Washington has been unsettling.

Searching for ways to reduce the huge federal budget deficit, Congress has targeted the student loan programs, which now account for about half of all student financial aid. Of $39 billion in anticipated deficit reduction over the next five years, almost $12 billion—by far the largest part—will come from the loan programs, leading to these changes:

• On July 1, interest rates on the popular Stafford loans will increase from a variable rate that has dipped as low as 4.7 percent this year, to a fixed rate of 6.8 percent.

Two-thirds of graduating seniors now borrow to pay the bills, and their average debt burden is $19,200, more than twice what it was a decade ago.

• Parent Loans for Undergraduate Students (PLUS) loans, which have been made at variable rates recently averaging 6.1 percent, now will carry a fixed rate of 8.5 percent.

• Limits on Stafford loans will be increased (from $2,625 to $3,500 for the first year; $3,500 to $4,500 for the second; $5,500 remains the limit for third- and fourth-year loans), but the total amount that a student can borrow remains capped at $23,000. After that, many students are turning to private loans, generally at higher interest rates.

• For the fifth year in a row, federal Pell grants for lower-income students will be funded at the same level—$4,050.

Two-thirds of graduating seniors now borrow to pay the bills, while in 1993 less than half did so. The average debt burden for these graduates is $19,200, more than twice what it was a decade ago, according to The Project on Student Debt, a non-profit advocacy group.

agencies and non-profit lenders. "I also think this will scare more low-income students away from higher education."

Said Luke Swarthout, a higher education associate at the Public Interest Research Group, "The bottom line is that Congress took $12 billion from the loan programs to pay for other things at the worst possible time. Tuitions are rising fast, the nation needs more college-trained people, and there is increasing evidence that one needs a college degree to lead a middle-class life."

Initially, changes in the loan programs were being studied as part of reauthorizing the Higher Education Act of 1965, a leisurely process that began three years ago. However, as the federal deficit soared, "most plans to reform the student loan programs were swept aside, and the loan programs became a deficit reduction target," said Becky Timmons, director of government relations for the American Council on Education. "We were on the students' side on this one—why not reduce lenders' subsidy further, instead of hiking student interest rates?"

The legislation that emerged, and that is now law—the Deficit Reduction Act of 2005—is not entirely unfavorable to students. In addition to increasing Stafford loan limits, Congress voted to phase out the three percent "origination fee" that has been added to federal loans. Also, graduate students now are eligible for the PLUS loans that previously were available only to parents of undergraduates. And two new grant programs were established who are proficient in math

More than 20 percent of student borrowers drop out, leaving them with no certificate or degree, and a debt to repay.

Banks and other for-pro some Congressional trims. because of the legislation, s Dean), special counsel for Consumer Bankers Associa

Dean said elimination o reduce lender revenue (alt were offering "no-fee" loan loans, which have been poc the federal government in t Budget Office estimates that these overpayments will amount to $13 billion over the

Workforce development

Two-year schools have big role too

To the editor of The Post:

A banner headline and article in your newspaper on Aug. 29 emphasized the need for Northern Kentucky University (and Thomas More College) to produce more four-year graduates if the Vision 2015 goal for 50,000 new jobs is to be attained. The article did contain some detailed information about the estimated number of jobs would be created if more students received bachelor degrees. The study was conducted by a consultant hired by the university.

I do not question the value of the bachelor degree or its need as a component of the region's vision for its future. What I question is the complete lack of inclusion of the role community and technical colleges in the consultant's study and in the article.

Public community and technical colleges like Gateway and Cincinnati State have as their two primary missions the preparation of the workforce and being open door institutions where students can begin their college careers and then transfer to other colleges and universities like NKU and Thomas More College.

Community college tuition is half that of most universities, which makes attending the community college for two years and then transferring a great bargain.

Neither the state of Kentucky nor this region will increase the number of bachelor degrees without the Gateways of the world being able to build their capacity to take in and graduate more students with the skills and knowledge to transfer

Others:

- **Regional stewardship**
- **Research and endowment match**

Six goals of HB1

- ✓ A seamless, integrated system of postsecondary education strategically planned and adequately funded to enhance economic development and quality of life.
- ✓ A major comprehensive research institution ranked nationally in the top 20 public universities at the University of Kentucky.
- ✓ A premier, nationally recognized metropolitan research university at the University of Louisville.
- ✓ Regional universities, with at least one nationally recognized program of distinction or one nationally recognized applied research program, working cooperatively with other postsecondary institutions to assure statewide access to baccalaureate and master's degrees of a quality at or above the national average.

Six goals of HB1 *(continued)*

- ✓ A comprehensive community and technical college system with a mission that assures, in conjunction with other postsecondary institutions, access throughout the Commonwealth to a two-year course of general studies designed for transfer to a baccalaureate program, the training necessary to develop a workforce with the skills to meet the needs of new and existing industries, and remedial and continuing education to improve the employability of citizens.
- ✓ An efficient, responsive, and coordinated system of providers that delivers educational services in quantities and of a quality that is comparable to the national average or above and significantly elevates the level of education of the adults of the Commonwealth.

Message components

Goal

- ✓ Fixed by General Assembly in permanent law.
- ✓ Is realistically achievable, but with diligence.
- ✓ Will create economic prosperity for all Kentucky.

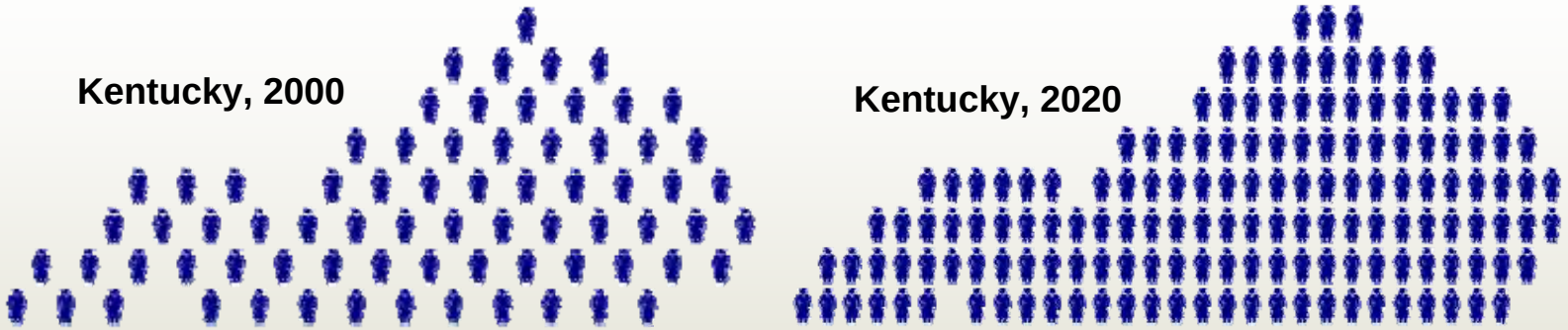
Plan

- ✓ A principal CPE responsibility.
- ✓ Outlines five strategies.
- ✓ Maximizes likelihood of success.

Funding

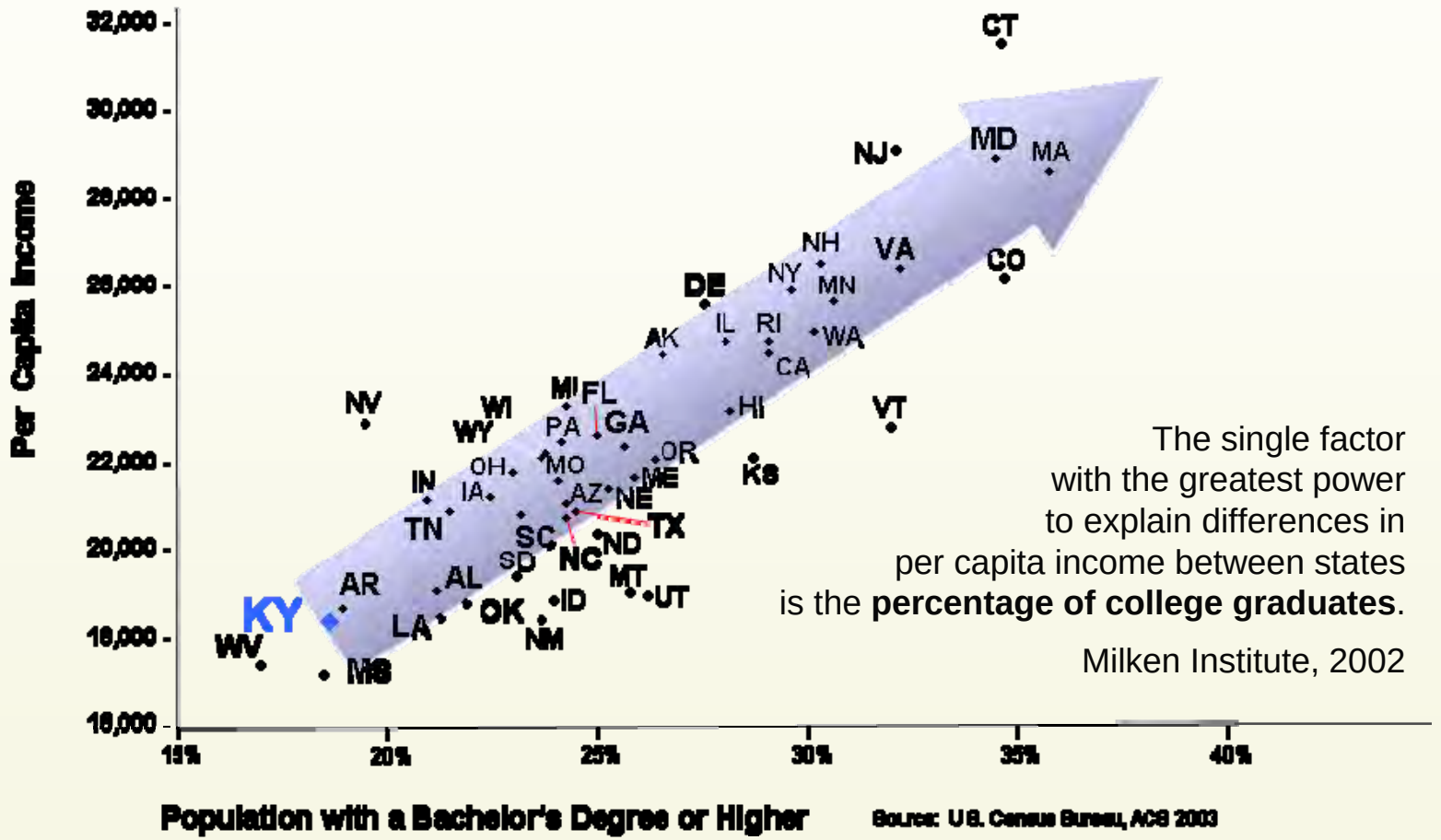
- ✓ Incents and supports goal-driven behaviors.
- ✓ Emphasizes outcomes rather than inputs.
- ✓ Essential to achievement of the goal.

Double the numbers



The most dramatic
economic transformation in Kentucky's history

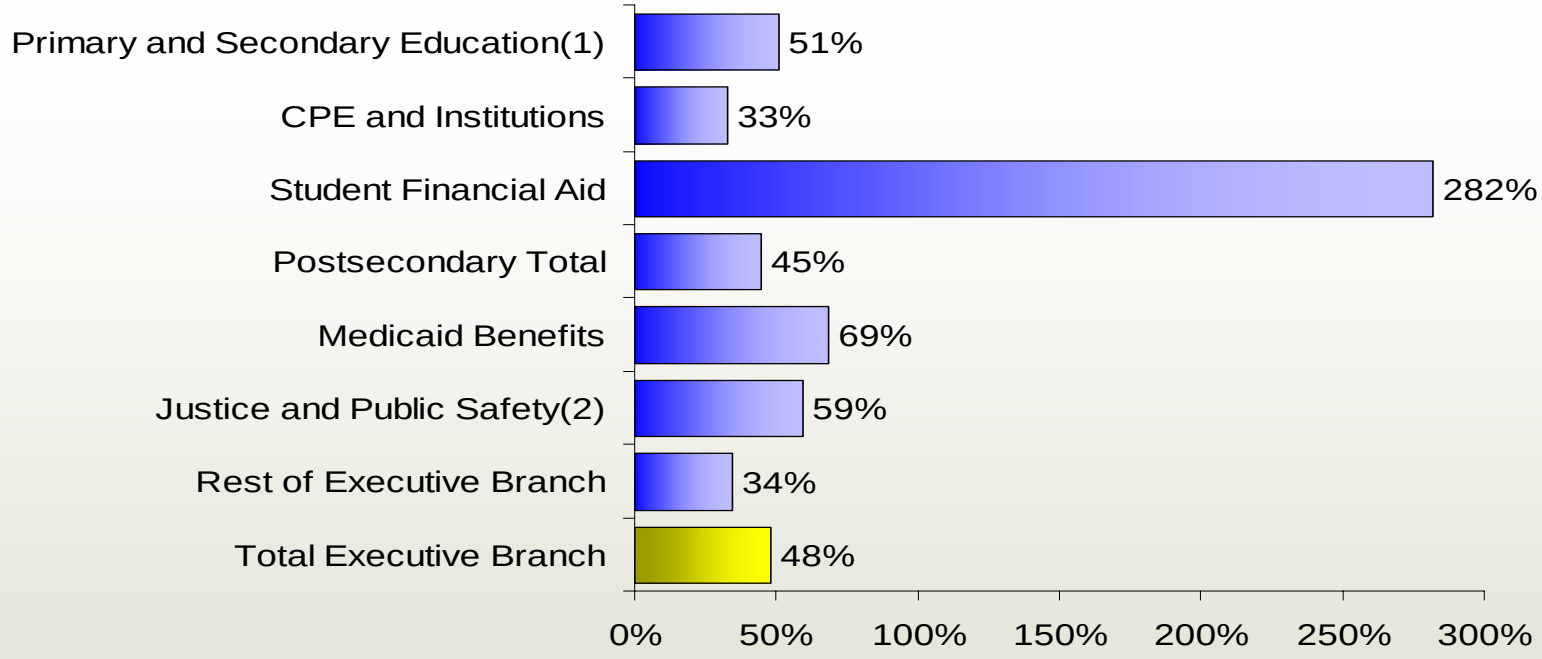
Why bachelor's degrees?



The single factor
with the greatest power
to explain differences in
per capita income between states
is the **percentage of college graduates**.

Milken Institute, 2002

% change in state appropriations FY99-08



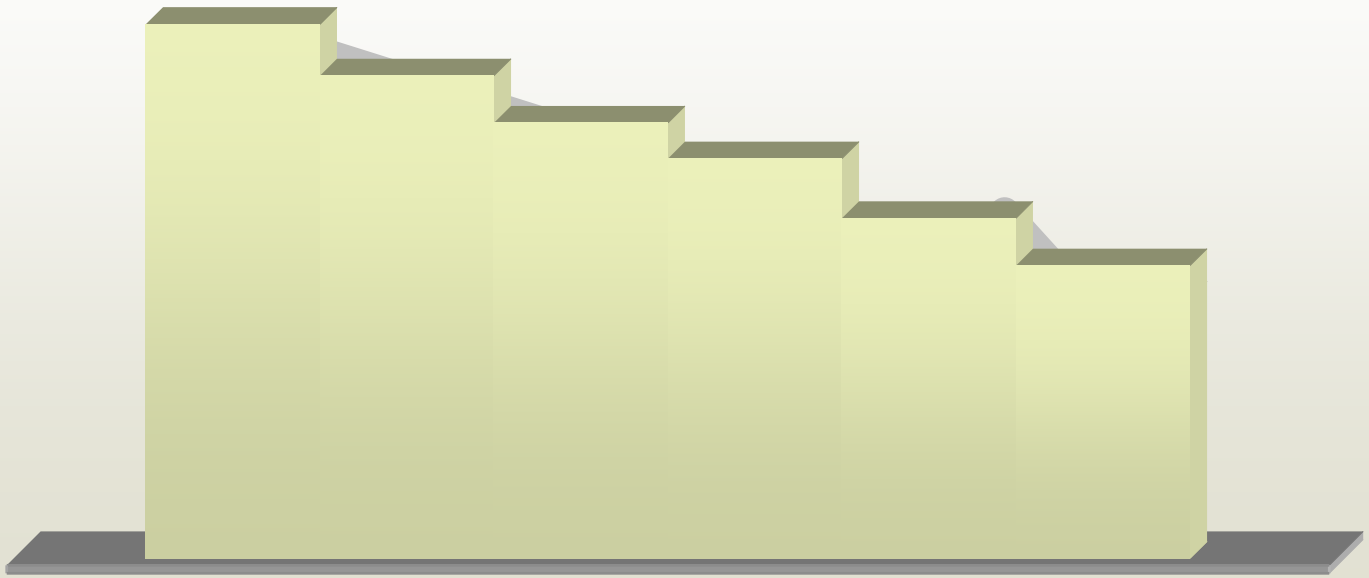
(1) Primary and Secondary Education includes funding for the Department of Education, the Kentucky Teachers' Retirement System, and the School Facilities Construction Commission.
(2) Figures for 2005 and 2006 include appropriations to the Department of Public Advocacy which was added to the Justice Cabinet through reorganization.

Principal themes

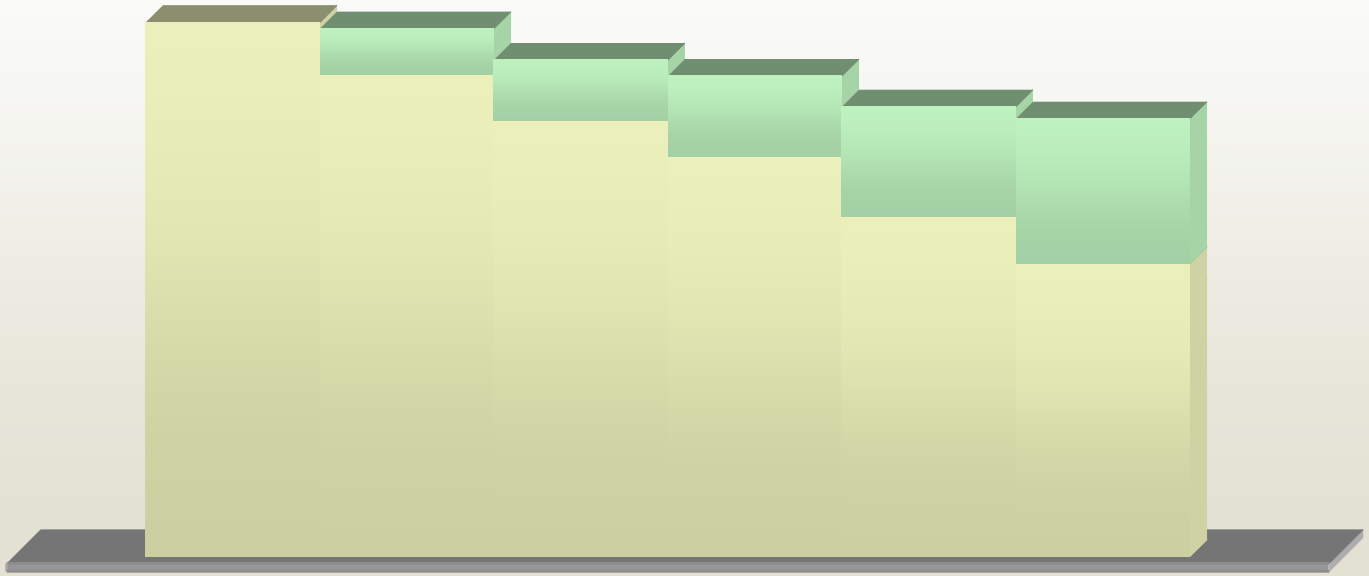
- ✓ A ‘tighter contract’ will yield higher appropriations.
- ✓ Seeks to align state funds with state goals.
- ✓ Driven by Double the Numbers and other strategic goals.
- ✓ Ensures funds to continue existing operations.
- ✓ Encourages and measures performance.

Slope = degree productivity

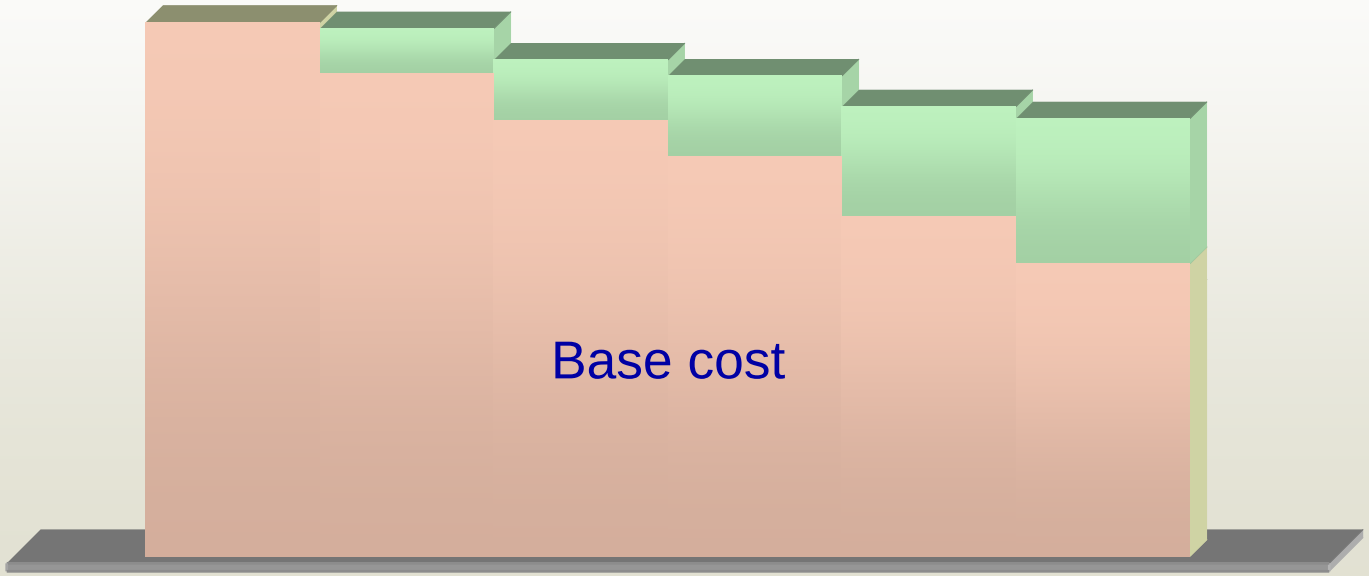
Slope = degree productivity



Slope = degree productivity



Slope = degree productivity



Funding model methodology

- ✓ Clear separation of ‘base’ from new ‘initiatives’.
- ✓ Previous strategic initiatives have been moved to the base.
- ✓ Increased emphasis on ‘costs’ for base and strategic initiatives.
- ✓ Blend of ‘incentive’ funding and ‘cost reimbursement’ funding for strategic initiatives.
- ✓ Seeks to encourage ‘productivity’; does not address ‘efficiency’.

Volume and structure

New funds


Continuation of ongoing operations
Strategic initiatives

Changes in approach

- ✓ Benchmark method has been abandoned.
- ✓ Regional equity considerations are deemed resolved by the last General Assembly.
- ✓ Gives emphasis to both ‘volume’ and ‘structure’ of General Fund appropriations.
- ✓ Focus on degree production and statewide priorities.
- ✓ Values degree production over enrollment.
- ✓ Inclusion of tuition as revenue source.

Outcomes

- ✓ Significant increase in General Fund support; postsecondary would regain ‘market share’.
- ✓ Ratio of new General Fund support to new tuition revenue is higher than in recent budgets.
- ✓ New funds are more concentrated in strategic initiatives (vs. base preservation) than before.
- ✓ Total public funds (tuition revenue and General Fund support) will rise faster than historical average.
- ✓ Strongly encourages degree productivity.

Why examine tuition and fee revenue?

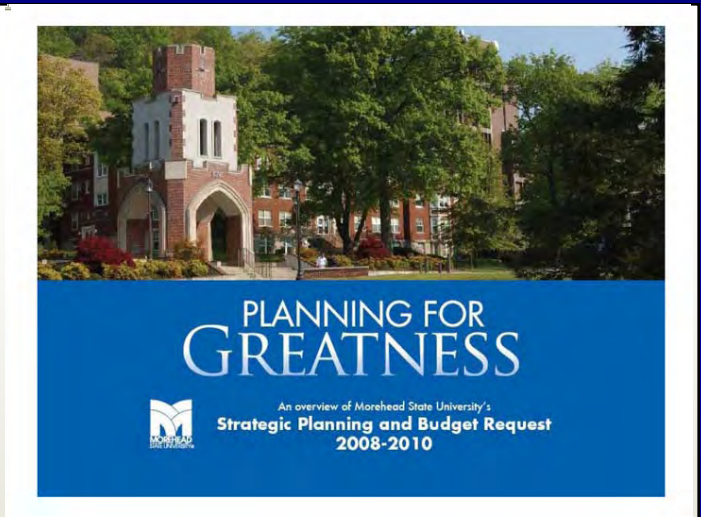
- ✓ Tuition and fee revenue is an essential part of each institution's revenue base.
- ✓ Council needs to know that the institutions have sufficient funds to advance state's goals.
- ✓ Revenue calculations are not 'recommendations,' predictions, or exercise of regulatory authority.
- ✓ Preserves separation of tuition by institution (not formulaically commingled).
- ✓ Proposed 'Access Initiative' recognizes affordability concerns at community and technical college level.

‘Bands’

	EKU	KSU	MoSU	MuSU	NKU	WKU	UK	UofL	KCTCS
Continuation of existing operations									
Base adjustment									
Capital renewal									
Maintenance and operation, new facilities									
Strategic Initiatives									
Double the Numbers Fund									
Developmental education									
Statewide priorities									
Access initiative									
Endowment match (Bucks for Brains)									

Relationship to business plans

- ✓ Business plan submissions were exceedingly useful and of high quality.
- ✓ Most were submitted in draft; not yet approved by trustees.
- ✓ The funding model was shaped by the business plans but the plans are not ‘bricks’ of the model.



Institution operating budget (estimated)

- ✓ Tuition and fee revenue
- ✓ Maintenance of ongoing operations
- ✓ Strategic investments

Institution operating budget FY 2008-09: $181 million (estimated)
Institution operating budget FY 2009-10: $175 million (estimated)

Gross tuition and fee revenue (estimated)

- ✓ Calls attention that Council recognizes important source of funds.
- ✓ Enrollment growth and estimated tuition increases.
- ✓ Tuition policy focused on access, adequacy, aid, and alignment.
- ✓ Discussion budget undergraduate, resident tuition rate increases of 9%, 6%, and 0%.

Gross Tuition and Fee Revenue FY 2008-09: $105 million (estimated)

Gross Tuition and Fee Revenue FY 2009-10: $116 million (estimated)

Maintenance of ongoing operations

- ✓ Inflationary adjustment of 3.3% on current base to provide adequate funds for ongoing operations.
- ✓ Two additional base adjustments/
  - ✓ Capital renewal ($5 million requires match).
  - ✓ Maintenance and operations of new facilities coming online in FY 2008-10.

Maintenance of ongoing operations FY 2008-09: $49 million

Maintenance of ongoing operations FY 2009-10: $57 million

Institution strategic investments

- ✓ Degree production performance funding (Double the Numbers Fund).
- ✓ Developmental education.
- ✓ Access at KCTCS.
- ✓ Statewide priorities.
- ✓ Endowment match program (Bucks for Brains).

Institutional strategic initiatives FY 2008-09: $26.5 M + DTN + B4B

Institutional strategic initiatives FY 2009-10: (recurring) + $2.5 million + DTN

Double the numbers fund

- ✓ Incentive to increase bachelor's degree production and associate degrees and transfers at KCTCS.
- ✓ Bonus funding to encourage STEM degrees, minority degrees, degrees from developmental education students, and KCTCS transfers.
- ✓ Institutions rewarded for each additional degree/transfer above current base.

Double the numbers fund FY 2008-09: $5 million

Double the numbers fund FY 2009-10: $15 million

Developmental education

- ✓ Developmental Education Task Force recommendations.
- ✓ Based on index that combines number of students served with average numbers of D.E. courses.
- ✓ Support programmatic redesign and additional infrastructure needed to increase student success.
- ✓ Requires plan and short-term goals.

Developmental education FY 2008-09: $4 million

Developmental education FY 2009-10: (recurring)

Access at KCTCS

- ✓ Proposal to freeze tuition rates during 2008-10.
- ✓ Intended to preserve role as low-cost access point.
- ✓ Goal to increase persistence rates and promote enrollment growth, especially adult learners.
- ✓ Special set aside in each year to help offset additional costs.
- ✓ Working with KCTCS on financial impact.

Access at KCTCS FY 2008-09: $7.5 million

Access at KCTCS FY 2009-10: (recurring) + $2.5 million

Statewide priorities

- ✓ To support research, regional stewardship, workforce development, transfer, STEM, outreach/extension, graduate education, etc.
- ✓ Requires plan and intended outcomes.
- ✓ May establish minimum dollar levels.
- ✓ Based upon the proportionate share of net total public funds minus mandated programs.

Statewide priorities/strategic initiatives FY 2008-09: $15 million

Statewide priorities/strategic initiatives FY 2009-10: (recurring)/TBD

Endowment match program (Bucks for Brains)

- ✓ Fourth round of funding (98-00, 00-02, and 02-04).
- ✓ Stimulate research and economic development.
- ✓ Requires universities to match state funds with donations from corporations, foundations, etc.
- ✓ Earnings from endowment fund faculty positions, programs, and scholarships.
- ✓ Proposed FY 2008-09 allocation is $60 M for UK, $30 M for UofL, and $10 M for comprehensives.

Endowment match program FY 2008-09: $100 million (nonrecurring)

2008-09 discussion budget

Prior Year Information (HB 380 Appropriations)	EKU	KSU	MoSU	MuSU	NKU	WKU
HB 380 Gross GF Appropriation	80,230,200	28,349,000	48,697,600	56,068,700	55,330,000	86,396,200
Less Debt Service & UofL Hospital Contract	468,800	907,300	495,500		230,500	1,280,600
Net GF Appropriation	79,761,400	27,441,700	48,202,100	56,068,700	55,099,500	85,115,600
CPE Trust Fund Appropriation	500,000	500,000	500,000	500,000	500,000	500,000
Adjusted Base	80,261,400	27,941,700	48,702,100	56,568,700	55,599,500	85,615,600
Maintenance of Ongoing Operations						
Base Adjustment	2,648,626	922,076	1,607,169	1,866,767	1,834,784	2,825,315
Capital Renewal	428,100	115,700	274,100	379,000	213,300	351,700
M&O of new facilities coming online 2008-09	896,103	95,060	334,580	18,329	1,412,103	786,223
Subtotal	3,972,829	1,132,836	2,215,849	2,264,096	3,460,187	3,963,238
Strategic Investments						
Developmental Education 2008-09	348,837	110,426	270,302	113,953	328,270	491,184
Statewide Priorities	1,243,900	335,400	734,200	832,400	835,900	1,283,700
Access						
Subtotal	1,592,737	445,826	1,004,502	946,353	1,164,170	1,774,884
Funding Recommendation						
Recommended Net General Fund Appropriation	85,826,966	29,520,362	51,922,452	59,779,149	60,223,856	91,353,721
Debt Service & UofL Hospital Contract	2,009,400	909,900	1,140,600	367,200	2,608,500	1,670,000
Recommended Gross General Fund Appropriation 2008-09	87,836,366	30,430,262	53,063,052	60,146,349	62,832,356	93,023,721
DTN Degree Production Performance Funding 2008-09*	(TBD)	(TBD)	(TBD)	(TBD)	(TBD)	(TBD)
Endowment Match Program/Bucks for Brains	2,268,000	780,000	1,371,000	1,594,000	1,567,000	2,420,000
Increase in Net GF						
Increase in Net General Fund Appropriation	5,565,566	1,578,662	3,220,352	3,210,449	4,624,356	5,738,121
Percent Change from prior year	7.0%	5.8%	6.7%	5.7%	8.4%	6.7%

* To be determined with $5 million awarded in 2008-09 based upon average performance in 2006-07 and 2007-08.

2009-10 discussion budget

	EKU	KSU	MoSU	MuSU	NKU	WKU
Funding Recommendation for Prior Year						
Recommended Gross General Fund Appropriation	87,836,366	30,430,262	53,063,052	60,146,349	62,832,356	93,023,721
Less Debt Service U of L Hospital Contract	2,009,400	909,900	1,140,600	367,200	2,608,500	1,670,000
Recommended Net General Fund Appropriation	85,826,966	29,520,362	51,922,452	59,779,149	60,223,856	91,353,721
Maintenance of Ongoing Operations						
Base Adjustment	2,802,718	971,035	1,702,400	1,972,107	1,940,788	2,988,727
M&O of new facilities coming online 2009-10	367,199	155,425	417,295	642,386	2,611,100	333,950
Subtotal	3,169,917	1,126,459	2,119,695	2,614,493	4,551,888	3,322,677
Strategic Investments						
Developmental Education 2009-10	(in base)	(in base)	(in base)	(in base)	(in base)	(in base)
Statewide Priorities	(in base)	(in base)	(in base)	(in base)	(in base)	(in base)
Access						
Subtotal						
Funding Recommendation 2009-10						
Recommended Net General Fund Appropriation 2009-10	88,996,883	30,646,822	54,042,146	62,393,642	64,775,744	94,676,399
Debt Service & UofL Hospital Contract	2,029,200	908,900	1,015,800	358,300	2,618,000	1,958,100
Recommended Gross General Fund Appropriation 2009-10	91,026,083	31,555,722	55,057,946	62,751,942	67,393,744	96,634,499
DTN Degree Production Performance Funding 2009-10*	(TBD)	(TBD)	(TBD)	(TBD)	(TBD)	(TBD)
Increase in Net GF						
Increase in Net General Fund Appropriation 2009-10	3,169,917	1,126,459	2,119,695	2,614,493	4,551,888	3,322,677
Percent Change from 2008-09	3.7%	3.8%	4.1%	4.4%	7.6%	3.6%

* To be determined with $15 million awarded in 2009-10 based upon average performance in 2007-08 and 2008-09.

2008-10 gross tuition revenue (estimated)

Gross Tuition and Fee Revenue	EKU	KSU	MoSU	MuSU	NKU	WKU
Gross Tuition & Fee Revenue Estimated 2007-08	94,045,300	16,106,731	47,860,450	73,859,726	90,019,600	120,082,000
Potential Cap for Resident, UG Tuition & Fee Rate Increase	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Gross Tuition & Fee Revenue Estimated 2008-09	103,568,098	17,862,668	52,566,859	80,921,202	99,246,767	132,050,286
Increase in Tuition & Fee Revenue 2008-09	9,522,798	1,755,937	4,706,409	7,061,476	9,227,167	11,968,286
Estimated % Change in Tuition Revenue from 2007-08	10.1%	10.9%	9.8%	9.6%	10.3%	10.0%
Gross Tuition & Fee Revenue Estimated 2009-10	114,053,483	19,819,629	57,534,725	88,625,070	109,492,062	145,177,827
Increase in Tuition & Fee Revenue 2009-10	10,485,385	1,956,961	4,967,866	7,703,868	10,245,295	13,127,541
Estimated % Change in Tuition Revenue from 2008-09	10.1%	11.0%	9.5%	9.5%	10.3%	9.9%

Institution total public funds (estimated)

Total Public Funds 2008-09*	EKU	KSU	MoSU	MuSU	NKU	WKU
Net Total Public Funds 2007-08	174,306,700	44,048,431	96,562,550	130,428,426	145,619,100	205,697,600
Projected Net Total Public Funds 2008-09	189,395,064	47,383,030	104,489,311	140,700,351	159,470,623	223,404,007
Projected Increase in Net Total Public Funds	15,088,364	3,334,599	7,926,761	10,271,925	13,851,523	17,706,407
Projected Increase in Net Total Public Funds	8.7%	7.6%	8.2%	7.9%	9.5%	8.6%
Total Public Funds 2009-10*						
Net Total Public Funds 2008-09	189,395,064	47,383,030	104,489,311	140,700,351	159,470,623	223,404,007
Projected Net Total Public Funds 2009-10	203,050,366	50,466,451	111,576,871	151,018,712	174,267,806	239,854,226
Projected Increase in Net Total Public Funds	13,655,302	3,083,420	7,087,560	10,318,361	14,797,183	16,450,219
Projected Increase in Net Total Public Funds	7.2%	6.5%	6.8%	7.3%	9.3%	7.4%

* Does not include allocation of $20 million in degree production performance funding or the $100 million allocation for Bucks for Brains

Institution capital budget

- ✓ Capital study
- ✓ Capital review process
- ✓ Capital budget plan
- ✓ Capital projects list

Capital study

- ✓ Better understand short-term and long-term capital needs.
- ✓ Tighten the link between facility condition, fit-for-continued-use, and need for new capacity.
- ✓ Key findings include most of Kentucky's buildings are over 30 years old, in relatively poor condition compared to national standards, and many major systems have exceeded their useful life expectancies and now need attention.
- ✓ Purpose of study to help emphasize direct link between improving the reliability of an aging plant and access, expanding capacity to educate students providing research space for increased economic and community benefit to support the 2020 goal and the Double the Numbers goal.

Capital review process

- ✓ Use data to ensure that infrastructure is adequate to achieve 2020 reform goals.
- ✓ Implement an evaluation system that is fully integrated, fair, equitable, and meets the needs of citizens, regions, and the state.
- ✓ Blend capital investments to make sure that facilities fit their intended purpose, innovate to meet future education needs efficiently.
- ✓ Recommend capital projects that support degree production, research capacity, and asset preservation.
- ✓ Pursue a sustained infusion of funds to promote high-quality learning/services.

Capital budget plan

- ✓ Establish five distinct categories of capital priorities (General Fund).
  - ✓ Capital Renewal, Maintenance, and Infrastructure.
  - ✓ Space Adequacy/Renovation.
  - ✓ New Construction/Expansion.
  - ✓ Research and Economic Development.
  - ✓ Information Technology Initiatives.
- ✓ Opportunities for institutions to complete projects with cash or issuance of debt that is supported by project revenue streams (not General Fund).

2008-10 capital discussion budget

Category	Amount	Percent
Capital renewal	$90 M	12%
Space adequacy & renovations	$160 M	22%
New & expanded E&G facilities	$272 M	37%
Research projects	$165 M	23%
Information & technology	$40 M	6%
Total	**$727 M**	100%

2008-10 capital discussion budget

October 17, 2007 — **General Fund Capital Project Evaluation - DRAFT FOR DISCUSSION ONLY**

System Priority	Cap Req Priority	Institution/Project Name	General Funds	Other Funds	Total	Percent
Project Category 1: Capital Renewal, Maintenance & Infrastructure Pool $90M						12%
1	1	Capital Renewal & Infrastructure Pool (allocation attached)	$ 90,000,000		$ 90,000,000	
		Total - (E&G) Capital Renewal & Infrastructure	*$ 90,000,000*	*$ -*	*$ 90,000,000*	
Project Category 2: Space Adequacy & Renovations $160M						22%
1	1	NKU-Renew/Renovate Old Science Building	27,500,000		27,500,000	
2	1	WKU-Renovate Science Campus Ph 3	24,000,000	6,000,000	30,000,000	
3	6	UofL-Renovate Life Sciences Building	30,024,000		30,024,000	
4	4	MoSU-Renovate Combs Classroom Building	24,448,000		24,448,000	
5	8	KCTCS- Renovate Downtown Campus, Phase 2, Jefferson CTC	28,612,000		28,612,000	
6	2	MuSU-Renovate Blackburn Science Building	25,686,000		25,686,000	
		Total - (E&G) Space Adequacy & Renovations	*$ 160,270,000*	*$ 6,000,000*	*$ 166,270,000*	
Project Category 3: New & Expanded E&G Facilities & Postsecondary Education Centers $272M						37%
1	1	MoSU-Construct Space Science Center Star Theatre/Clean Room	9,641,000		9,641,000	
2	2	NKU-Construct Health Innovation Center *	43,650,000		43,650,000	
3	1	MuSU-Construct/Complete New Science Complex, Final Phase	15,000,000		15,000,000	
4	1	KSU-Expand/Renovate Betty White Nursing Building	6,164,000		6,164,000	
5	1	KCTCS- Costruct Owensboro Tech Center & Postsecondary Center	14,055,000		14,055,000	
6	3	KCTCS-Construct Advanced Manufacturing Facility (Bluegrass)	22,000,000		22,000,000	
7	1	EKU-Construct Science Building - Phase 2 *	39,520,000		39,520,000	
8	2	UK-Construct Gatton Building Complex *	65,250,000	25,000,000	90,250,000	
9	1	UofL-Construct Belknap Classroom/Academic Building *	56,532,600		56,532,600	
		Total - (E&G) General Fund Projects Requested	*$ 271,812,600*	*$ 25,000,000*	*$ 296,812,600*	
Project Category 4: Research & Economic Development Projects $165M						23%
1	1	UK-Construct Science Research Building #2 *	104,000,000		104,000,000	
2	2	UofL- Renovate Medical Dental Research Building, Ph IV*	20,473,200		20,473,200	
3	2	WKU-Construct Materials Characterization/ICET, Ph 2	4,575,000	600,000	5,175,000	
4	3	UK-Expand/Upgrade Livestock Disease Diagnostic Center Ph 2*	18,000,000		18,000,000	
5	4	MuSU-Construct New Breathitt Veterinary Center *	17,850,000		17,850,000	
		Total - (R&ED) General Fund Projects Requested	*$ 164,898,200*	*$ 600,000*	*$ 165,498,200*	
Project Category 5: Information Technology Initiaitives $40M						6%
1	1	Information Technology Initiatives (Pool)	40,000,000		40,000,000	
		Total - (E&G) Information Technology Initiatives	*$ 40,000,000*	*$ -*	*$ 40,000,000*	100%
		System Total - General Fund Projects Requested	*$ 726,980,800*	*$ 31,600,000*	*$ 758,580,800*	

Agency: statewide coordination

- ✓ Council operations
  - ✓ Kentucky Virtual Campus and Library
- ✓ Kentucky Adult Education
- ✓ Pass throughs
- ✓ Statewide strategic initiatives

Agency: statewide coordination FY 2008-09: $25 million

Agency: statewide coordination FY 2009-10: (recurring)+$2.8 million

Council operations

- ✓ Defined state calculations for staff salaries and benefits.
- ✓ Several new support staff, KPEDS implementation, expanded communication efforts, and increases in state eLearning contracts.

Council operations FY 2008-09: $1.6 million
Council operations FY 2009-10: (recurring) + $0.6 million

Kentucky Adult Education

- ✓ DTN Plan strategy 2 calls for increasing the number of GED graduates and the percent that transition to college.
- ✓ Maintenance of ongoing operations related to staff salaries, benefits, utility costs, as well as increases in instructional support costs.

Kentucky Adult Education FY 2008-09: $2 million
Kentucky Adult Education FY 2009-10: (recurring) + $2 million

Pass throughs expansion

- ✓ Programs where funds pass through the Council to support various state programs and services.
- ✓ Contract spaces for students to study veterinary medicine and optometry.
- ✓ Kentucky Autism Training Center.

Pass throughs FY 2008-09: $284,000
Pass throughs FY 2009-10: (recurring) + $162,400

Statewide strategic investments

- ✓ College extension and outreach.
- ✓ Developmental education.
- ✓ Transfer.
- ✓ Science, Technology, Engineering, and Mathematics (STEM).
- ✓ Information and technology.

Statewide strategic investments FY 2008-09: $21.1 million
Statewide strategic investments FY 2009-10: (recurring)

College extension and outreach

- ✓ Statewide college access campaign.
- ✓ Local P-16 Councils.
- ✓ Kentucky GEAR UP program.
- ✓ Statewide diversity planning.

Statewide strategic investments FY 2008-09: $5.8 million
Statewide strategic investments FY 2009-10: (recurring)

Developmental education

- ✓ DTN Plan strategy 1 calls for increasing number of college ready high school graduates.
- ✓ Public teacher professional development.
- ✓ Incentive funds for K-12 districts to increase number of college ready high school graduates.
- ✓ Teacher preparation matching funds.
- ✓ Incentive funds to support EPAS implementation.

Statewide strategic investments FY 2008-09: $1.3 million
Statewide strategic investments FY 2009-10: (recurring)

Transfer

- ✓ DTN Plan strategy 3 calls for increase in number of transfers to over 11,000 by 2020.
- ✓ Statewide transfer technology infrastructure.
- ✓ Statewide coordination and articulation agreements.
- ✓ Collaborative academic and training partnerships between KCTCS and four-year institutions.

Statewide strategic investments FY 2008-09: $1.5 million
Statewide strategic investments FY 2009-10: (recurring)

STEM

- ✓ DTN Plan strategy 5 calls for growing number of high-wage, high-skilled workers in Kentucky.
- ✓ Science, Technology, Engineering, and Mathematics (STEM) Task Force recommendations.
- ✓ P-16 engineering pipeline - Project Lead The Way.
- ✓ New economy initiatives.

Statewide strategic investments FY 2008-09: $10 million
Statewide strategic investments FY 2009-10: (recurring)

Information and technology

- ✓ DTN Plan strategy 4 calls for increased participation, quality, and success
- ✓ Kentucky learning content repository
- ✓ KY Postsecondary Education Network - bandwidth upgrade
- ✓ KYVL - electronic databases - inflation

Statewide strategic investments FY 2008-09: $2.6 million
Statewide strategic investments FY 2009-10: (recurring)

2008-10 Discussion Budget

Kentucky Council on Postsecondary Education

October 17, 2007

Bradford L. Cowgill
John Hayek
Sherron Jackson

Council on Postsecondary Education
October 17, 2007

Bucks for Brains Ten-Year Report

2007 marks the ten year anniversary of both postsecondary education reform and the creation of Kentucky's innovative endowment match program popularly known as the Bucks for Brains program. The program was funded for three consecutive biennial budgets from 1998-2000 through 2002-2004. The Council on Postsecondary Education reviews annual progress reports from the public universities regarding their respective endowment match programs. With the ten year anniversary of the Bucks for Brains program, a more comprehensive and summative report has been prepared.

A DRAFT version of the CPE report entitled "Ten Year Anniversary Assessment of Kentucky's Bucks for Brains Initiative" will be distributed to Council members at the October 17 meeting as an information item. A printed version of the Bucks for Brains program anniversary brochure also will be distributed to Council members at the October 17 meeting.

The report provides an overview of Kentucky's historic investment in the Bucks for Brains program. The state's investment in Bucks for Brains has demonstrated dramatic success in increasing private donations to public universities, growing university endowments, expanding endowed chairs and professorships, enhancing intellectual capital, and attracting significant amounts of external funding for research and special programs. The report also outlines a variety of potential scenarios regarding future additional funding of the Bucks for Brains initiative.

The Research, Economic Development, and Commercialization Policy Group met October 15 via teleconference to review the Bucks for Brains brochure and the draft version of the report.

Input regarding the Bucks for Brains report will be included in the final version of the document to be presented as an action item at the November 5 Council meeting.

Staff preparation by Allyson Handley

FIVE QUESTIONS – ONE MISSION

Better Lives for Kentucky's People

Kentucky Council on Postsecondary Education

DRAFT

Ten Year Anniversary Assessment

of

Kentucky's "Bucks for Brains" Initiative

October 2007

Prepared by Dr. Allyson Hughes Handley and Dr. William H. Payne

Leon Zernitsky/SIS Illustrations

The Council on Postsecondary Education would like to acknowledge the collaboration and assistance of the Bucks for Brains Ten Year Assessment Work Group that included the following institutional teams and members:

University of Kentucky	Bill Swinford	
University of Louisville	Mike Curtin	Manny Martinez
Eastern Kentucky University	Joseph Foster	Kara Covert
Kentucky State University	Steve Mason	
Morehead State University	Michael Seelig	
Murray State University	Carl Prestfeldt	
Northern Kentucky University	Sue Hodges Moore	
Western Kentucky University	Bob Edwards	

The Council would also like to acknowledge the assistance of Dr. Paul Coomes, Professor of Economics and National City Research Fellow, College of Business and Public Administration, University of Louisville, and Dr. Kenneth Troske, Professor of Economics, Gatton College of Business and Economics, University of Kentucky, for their assistance with the analysis of the "multiplier effect" of federal and extramural research on the university, the region, and the state.

Dear Fellow Kentucky Citizens:

In May 2007, we celebrated the 10th anniversary of postsecondary education reform in Kentucky. *The Kentucky Postsecondary Education Improvement Act of 1997* (HB 1) was passed to ensure a comprehensive reform of the Commonwealth's entire system of postsecondary education. Six legislatively mandated goals were established to improve the economic prosperity of Kentuckians through the vehicle of increased postsecondary educational attainment. This landmark legislation created the Council on Postsecondary Education (CPE) and charged this agency with responsibility for coordinating and assessing progress in achieving the six goals of postsecondary education reform.

House Bill 1 also provided the foundation for the creation of a unique incentive program commonly referred to as the "Bucks for Brains" initiative, to dramatically increase the number of endowed chairs and professorships at Kentucky's public universities. Kentucky's investment in Bucks for Brains has demonstrated dramatic success in increasing private donations to our public universities, growing university endowments, expanding endowed chairs and professorships, enhancing intellectual capital, and attracting significant amounts of external funding for research and special programs.

This report provides an overview of Kentucky's historic investment in this innovative "Bucks for Brains" endowment match program. I am pleased to share with you a sampling of data and anecdotal profiles that demonstrate the successes of this visionary initiative. However, much remains to be accomplished if Kentucky hopes to achieve all of the goals contained in House Bill 1. This report also outlines a variety of potential scenarios regarding future continued funding of the Bucks for Brains initiative through the biennial budget process. We invite your comments and suggestions.

Very truly yours,

Bradford L. Cowgill
Interim President

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"The Bucks for Brains program has accomplished several things for Kentucky during the past ten years. First, the fundraising capacity of Kentucky's public universities has dramatically increased through matched Bucks for Brains public funds. Secondly, the program has demonstrated to the higher education community that Kentucky's citizens think education is important as a personal investment. Thirdly, the academic and research quality of our public institutions has been advanced. Finally, the program has demonstrated the importance of higher education research to the development of Kentucky's economy and to the creation of solutions for Kentucky's health and socioeconomic problems."

Paul Patton, Governor, Commonwealth of Kentucky 1995-2003

The Vision

The 1997 *Kentucky Postsecondary Education Improvement Act* (HB 1) created the Strategic Investment and Incentive Funding Program (codified as KRS 164.7911) to provide strategic financial incentives to advance postsecondary education. Six distinct trust funds were created: Research Challenge, Regional University Excellence, Technology Initiative, Physical Facilities, Postsecondary Workforce Development, and Student Financial Aid and Advancement. The University of Kentucky and the University of Louisville receive state Bucks for Brains funds through the Research Challenge Trust Fund. Bucks for Brains funding for the comprehensive universities is appropriated through the Regional University Excellence Fund.

HB 1 designated the Council on Postsecondary Education (CPE) with the authority to issue guidelines for the administration of the Strategic Investment and Incentive Funding program (KRS 164.7911 through 164.7927).

The Endowment Match program, also known as the "Bucks for Brains" initiative, was established through the 1998 biennial budget and was designed to attract top researchers to Kentucky. The Bucks for Brains (B4B) program requires that universities match the appropriated state funds with donations from philanthropists, corporations, foundations, and other nonprofit agencies. Public and private matched funds are invested and the earnings are utilized to fund faculty positions, research, special programs, or scholarships. The invested principal remains untouched in order to provide a perpetual source of funding to ultimately meet the goals of HB1 through the commercialization of research, the creation of knowledge economy jobs, and the improvement of Kentucky's economy and standard of living.

+The Context for the Ten Year Assessment of the B4B Initiative

2007 marks the ten year anniversary of higher education reform in Kentucky including the creation of the Bucks for Brains program. This report examines the impact of the B4B state investment including both short- and long-term goals, qualitative and quantitative outcomes, and anecdotal profiles of selected Bucks for Brains researchers.

In reviewing Bucks for Brains data, it is important to keep several factors in mind that provide an important context for the ten year anniversary assessment of this initiative.

- **Historical Context:** Although the B4B program was introduced conceptually in 1997 (HB 1 – "Strategic Investment and Incentive Trust Funds"), the program was not actually created until the 1998 biennial budget was enacted. The 1998-00 budget contained language regarding the creation of the B4B program and the role of CPE in designing and implementing program guidelines and accountability for the trust funds. Actual institutional implementation of the program occurred during the period from 1999 through 2002.

- **Academic Context:** From an academic perspective, the CPE and the public universities required substantial time to create procedural guidelines and the infrastructure to support the implementation of the B4B program. The universities needed to engage in a process to identify both potential donors and the discipline-specific endowed chairs and professorships that would utilize the vehicle of B4B funding. In addition to the time required for infrastructure development, faculty hiring processes tend to be highly proscribed, protracted, and very competitive. Faculty searches typically take from six to 18 months to complete and often may be reopened a second time if successful candidates are not identified or hired through an initial search process. With respect to the B4B goal of ultimately stimulating the creation of research-based companies, many traditional academics are admittedly unskilled and disinterested in the business and legal elements required to successfully commercialize research. Additionally, existing faculty promotion and tenure policies do not typically award credit for commercialization activities. Faculty who choose to pursue commercialization opportunities often report that such efforts take time away from their traditional faculty work in the areas of teaching, scholarship, and service.

- **Fundraising Context:** In 1998, institutional fundraising functions and staff were limited at most public universities within Kentucky. Beginning in 1999-00, public universities began to rapidly expand their respective fundraising activities and staff primarily to serve the B4B fund matching requirements. Fundraising activities by their very nature require time, cultivation, and expertise to identify potential donors for specific academic

disciplines, research, or programs. Also, compared with many other states, Kentucky lacks depth in the number and financial resources of private family or corporate foundations that might potentially provide the matching funds to qualify for the B4B awards. Public universities needed sufficient time to cultivate a "culture of philanthropy" both on their respective campuses and among their pool of potential prospects or current donors.

- **Research and Commercialization Context:** In 1997, Kentucky received relatively small amounts of external federal funding compared to other states of comparable size. In fact, Kentucky's limited extramural research performance is what prompted the creation of the B4B program. Although Kentucky has made admirable progress in dramatically increasing external research funds garnered by the public universities and colleges, other states also have continued to aggressively pursue federal and extramural funding. At the same time, federal funding for research and development as a percentage of gross domestic product (GDP) has actually declined from 1.25 percent in 1985 to about .75 percent in 2006.[1] During the same time period, industry funding of longer term basic research in the United States also has begun to decline due to several factors including the emerging and less expensive R & D opportunities in foreign countries.

- **Economic Development Context:** The B4B program has in reality only been fully functioning for about five years due to the time needed to build fundraising and research infrastructure in Kentucky's universities. Five years is an extremely short period of time to realize any significant commercialization events resulting from B4B faculty research. Kentucky must be thoughtful and strategic when investing in "niche" commercialization opportunities generated from university developed intellectual capital. It is also worth noting that only recently did Kentucky create specific economic development incentives for targeted innovation and commercialization activities. Kentucky's educational and economic development strategies must be more closely aligned in the future to effectively leverage state investment in emerging commercialization opportunities. Finally, such investments often by their very nature are highly speculative and statistically only a small percentage will actually succeed. However, if Kentucky failed to continue its investment in research and technology start-up enterprises, the potential opportunity would be missed to experience a "blockbuster" event resulting from research commercialization.

[1] Rising Above the Gathering Storm R&D pg 7

The Architects of the B4B Initiative

> "The Bucks for Brains program was a magnificent idea that engaged business and industry to leverage the investment of state dollars. Through the Ashland Foundation, we were able to donate money to every public university within the state of Kentucky. Ashland's donations provided the required match for the Bucks for Brains funding. I'm very proud of being part of Ashland at that particular time."
>
> *Charles Whitehead, former President of the Ashland Foundation, and CPE Chair 1999-2002*

Prior to his election as Governor of Kentucky, Paul Patton served as secretary of the Economic Development Cabinet under Governor Brereton Jones. Governor Patton understood the direct relationship between educational attainment and economic development. Postsecondary educational reform emerged as a central and enduring public policy initiative throughout both of Patton's terms as Governor. In Patton's inaugural address in December 1995, he called for comprehensive and systemic improvement at all levels of postsecondary education.

In 1996, the General Assembly passed legislation (Senate Concurrent Resolution 93) that created the "Task Force on Postsecondary Education." The task force was appointed May 24, 1996, and consisted of 18 members – with equal members appointed by the Governor, the Senate, and the House of Representatives. Jody Richards (D), Larry Clark (D), Greg Stumbo (D), Danny Ford (R), and Charlie Walton (R) represented the House. John "Eck" Rose (D), Charlie Berger (D), Joey Pendleton (D), David Williams (R), and Charlie Borders (R) represented the Senate. After Berger was defeated in 1996, Tim Shaughnessy (D) replaced him on the task force. Governor Patton, Margaret Greene, Jim Ramsey, Rodney "Biz" Cain, Viola Miller, and Roy Peterson represented the Executive Branch. Later Crit Luallen replaced Greene who left the Governor's Cabinet to return to the private sector.

Approximately 275 citizens from across Kentucky were organized into advisory groups that included business leaders, university presidents (public and independent), community college and technical program staff, students, and other special interest groups. Following an intensive review of materials and discussion, external consultants from the National Center for Higher Education Management Systems (NCHEMS) and the Education Commission of the States (ECS) were hired to analyze issues and to assist with the preparation of a comprehensive report.

In March 1997, the Task Force on Postsecondary Education released its final report and recommendations. The task force report provided the foundation for systemic reform of Kentucky's postsecondary education institutions including the creation of the

seven investment and incentive trust funds to advance the goals and objectives of postsecondary education. The report's key findings included the following:

> "Kentucky seriously lags the nation and competitor states in research and development activity."
> *Postsecondary Education in Kentucky – An Assessment March 1997 page 6*

In developing his plan for reforming higher education in Kentucky, Governor Patton discussed his ideas with many experts both in and outside of Frankfort. The original idea to enhance research by dramatically increasing the number of endowed chairs at Kentucky's universities emerged from a dinner conversation that Governor Patton had early in his first term with David Hawpe of the Louisville Courier Journal newspaper. Later Governor Patton met with Ron Greenberg and Hank Wagner of Jewish Hospital in Louisville and the notion of bonding a very significant investment of capital to fund the creation of more endowed chairs developed. The new program initially was referred to as "Bonds for Brains." Ron Greenberg apparently coined the enduring and descriptive phrase "Bucks for Brains" to describe Kentucky's proposal to create an endowment match program.

Governor Patton directed Mr. Greenberg to elaborate on these ideas and to create a final proposal working with Skipper Martin and Crit Luallen from the Governor's Office and Dr. James Ramsey who was serving as the state budget director. Once the defining elements of the Bucks for Brains program were articulated, it was then necessary to obtain legislative support. A series of meetings with key legislators took place and strong bipartisan and bicameral support for the program began to develop.

Governor Patton credits the members of the Kentucky legislature for their collective leadership in the creation of the Bucks for Brains program through enabling legislation passed during the 1997 Special Session. However, clearly it was Governor Patton who provided the vision and the gubernatorial leadership for higher education reform which included the very innovative and unique Bucks for Brains initiative.

The primary goal of postsecondary education reform in 1997 was:

> "To assure that Kentucky's postsecondary and technical education system is positioned to provide the human capital necessary to be a leader in the global economy of the 21st century."
>
> *Cover Letter from Governor Paul Patton – Postsecondary Education in Kentucky: An Assessment – March 1997*

Genesis of the Bucks for Brains Program

The *Kentucky Postsecondary Education Improvement Act of 1997* (HB 1) created the Strategic Investment and Incentive Funding Program or "trust funds" that enabled state appropriations to finance the Bucks for Brains program at Kentucky's public universities. The Kentucky biennial 1998-2000 budget bill created the original funding mechanism to implement the B4B program.

The Council on Postsecondary Education was charged with the responsibility for designing and implementing specific guidelines for the trust funds that would advance the goals of HB 1. The Kentucky Postsecondary Education 1998-2000 Trust Fund Guidelines provide specifications for the implementation of the program. For example, the guidelines specify that for the Research Challenge Trust Fund, 70 percent of program funds at UK and UofL must support programs or disciplines in five "new economy" priority areas:

- Human health and development
- Biosciences
- Materials science and advanced manufacturing
- Information technologies and communications
- Environmental and energy technologies

Appropriations for trust funds must adhere to all statutory allocation guidelines and do not lapse at the end of the fiscal year. Interest is earned pending distribution of the funds. In addition, the guidelines require that by October 15 each year, the public universities must complete an annual report to be submitted to CPE that outlines program activities and outcomes, uses of funds, and matching requirements. The respective institutional governing boards are charged with reviewing and approving matching gifts and pledges and with overseeing the implementation of the B4B program according to the prescribed guidelines.

Goals for the Bucks for Brains Program

The architects of the B4B initiative and the legislators who supported the enabling legislation for the program understood and embraced the intended positive causal relationship between enhanced university research and the potential for improved local and state economic development.

Short-term goals for the Bucks for Brains (B4B) program included:

1. Enhanced fundraising by the universities.
2. Growth of university environments.
3. Increases in the number of endowed academic chairs and professorships.

4. Significant progress in attracting externally funded research to the public universities.

Long-term goals for the program focused on:

5. Commercialization of research.
6. Stimulation for university and research related business development.
7. Creation of jobs.
8. Facilitation of Kentucky's transition to a knowledge-based economy.

Overview of Short-Term B4B Goals

Analysis of B4B institutional data overwhelmingly demonstrates the success of the state's financial investment in accomplishing the short-term goals for the program.

1. Fundraising

Kentucky's public universities raised significant private funds through the endowment match program.

Institutional Match Funds 1997-2007

University of Kentucky	$153,722,882
University of Louisville	82,731,805
Eastern Kentucky University	10,213,837
Kentucky State University	1,745,683
Morehead State University	6,645,655
Murray State University	8,380,683
Northern Kentucky University	8,033,753
Western Kentucky University	10,746,183
Total	$282,220,481

(Plus $28.5 million in additional pledges)

2. University Endowments

Endowments have grown significantly at Kentucky's public universities.

Since the inception of the B4B program, the market value of Kentucky's public university endowments has grown from $454 million in 1997 to $1.5 billion in 2006, a 230 percent increase.

3. Endowed Chairs and Professorships

Kentucky's public universities have dramatically increased the number of endowed chairs and professorships.

159 B4B endowed chairs have been created.

227 B4B endowed professorships have been created.

The total number of endowed chairs has increased from 55 in 1997 to 312 in 2006, an increase of 284 percent. The total number of endowed professorships has increased from 53 to 312 (489 percent).

4. Externally Funded Research

Significant progress in attracting externally funded research to Kentucky's public universities has occurred due to the B4B program.

Between 1997 and 2006, federal R & D expenditures at the research universities increased from $76 million to $222 million, or by 192 percent. Extramural R & D expenditures increased from $105 million to $327 million, or by 211 percent.

Overview of Long-Term B4B Goals

Progress in achieving the long-term goals of the B4B investment has been demonstrated, but an extended period of investment will be required in order to realize the intended economic development outcomes from the program. As previously noted, the B4B program has only been fully operational for five to six years which is a very short timeframe in which to realize any commercialization results from research. However, several significant successes and growth trends may be noted with respect to the longer term goals for the B4B initiative.

5. Commercialization of Research

In 1997, no university research generated start-up companies were reported by UK and UofL on the Association for University Technology Managers (AUTM) annual survey. In 2006, UK and UofL reported the formation of a total of 11 start-up companies.

6. University and Research Related Business Development

Invention disclosure reported by UK and UofL on the AUTM annual survey increased from 70 in 1997 to 157 in 2006. Reported licenses and options executed by UK and UofL grew from six in 1997 to 31 in 2006. Reported active licenses and options grew from 59 in 1997 to 142 in 2006.

7. Job Creation

The University of Louisville and the University of Kentucky have begun to tabulate the tangential impact of B4B chairs and professors on the recruitment of other researchers to their respective institutions. For example, since Dr. Don Miller became the director of UofL's James Graham Brown Cancer Center in 1999, he has recruited more than 75 new clinical and research faculty to the institution. These newly recruited cancer center faculty members are creating groundbreaking research on cures for a variety of cancers. Jason Chesney's research has demonstrated that a drug originally developed

for diabetes can significantly shrink tumors caused by malignant melanoma. John Eaton and Robert Mitchell have created a lung cancer vaccine that shows promising results in mice.

8. Transition to a Knowledge-Based Economy

Due to the relatively short duration of the Bucks for Brains initiative, it is difficult to accurately estimate the impact of the Endowment Match Program in facilitating Kentucky's transition to a knowledge-based economy. However, Appendix A features a preliminary analysis of the regional impacts of the Bucks for Brains program by University of Louisville economist, Professor Paul Coomes and University of Kentucky economist Dr. Kenneth Troske. In this report, Professors Coomes and Troske provide estimates regarding the cumulative economic and fiscal impact of the Bucks for Brains program at UK and UofL.

Utilizing the IMPLAN regional input-output modeling system, Professor Coomes estimates that UK and UofL scholars (partially sponsored by the B4B program) have generated $442 million from federal and out-of-state funding sources. He further estimates that the "combined external funds attracted by B4B scholars are associated with $762.5 million in sales to establishments statewide (including the university revenues) over the decade." (*The Regional Economic Impacts of the Bucks for Brains Program - Dr. Paul Coomes and Dr. Kenneth Troske, page 1)*

Furthermore Professor Coomes and Toske's analysis estimates total associated employee compensation for B4B scholars as $278.8 million which generates $19.5 million in Kentucky sales and income taxes as well as local occupational taxes of $3.3 million. Externally generated B4B research funding also supports over 2,100 jobs statewide.

The Investment

"By focusing our Bucks for Brains funding in a few key areas, Kentucky has the greatest opportunity to realize overwhelming success from this program. For example, the University of Louisville has focused on the health sciences and specifically areas like cardiovascular disease, microsurgery and cancer. With focused investment of Bucks for Brains funding, the potential for groundbreaking translational research is maximized. The recently released cervical cancer drug is an excellent example of the potential impact of focused funding for translational research that has the capacity to improve the lives of Kentuckians."

Ron Greenberg, Former Chair of the Council on Postsecondary Education

The following information outlines the time frames and sources for Kentucky's $350 million investment in the Bucks for Brains initiative.

Biennial Budget	**Amount**	**Source**
1998-2000	$110 million ($100 million Research Challenge Trust Fund with two thirds to UK & one third to UofL) ($10 million to Regional University Excellence Trust Fund)	General Fund
2000-2002	$120 million ($100 million to Research Challenge Trust Fund with two thirds to UK and one third to UofL) ($20 million to Regional University Excellence Trust Fund)	General Fund
2002-2004	$120 million ($100 million to Research Challenge Trust Fund with two thirds to UK and one third to UofL) ($20 million to Regional University Excellence Trust Fund)	Sale of Taxable Bonds

Total State Investment = $350 million

The Return on Investment

"The Endowment Match Program (EMP) has been a critical part of the University of Kentucky's effort to achieve the legislative mandate that it become a top 20 public research university by 2020. Bucks for Brains has strengthened the university's human capital, resulting in significant improvement across a range of measures of institutional quality. The program has transformed the university's culture to one of excellence. And EMP has had a remarkable impact on the university's broader fundraising efforts. As the University of Kentucky continues to pursue its mandate through the implementation of the Top 20 Business Plan, the resources provided by the EMP will be essential to progress."

UK – Bucks for Brains Institutional Progress Report, 2007

As of 2006, some highlights of the successful return on investment of the Bucks for Brains program include:

- **47 percent** increase in annual giving at UK and UofL.
- **$1 billion** increase in the market value of endowment assets at UK and UofL.
- **159 B4B endowed chairs** and **227 B4B endowed professorships** appointed at Kentucky's public universities.
- **17 percent** (approximately) of all federal R&D expenditures generated by B4B faculty.
- **14 percent** (approximately) of extramural R&D expenditures generated by B4B faculty.
- **16 percent** (approximately) of all licenses/options generated by B4B faculty.
- **30 percent** (approximately) of all new U.S. patent applications generated in Kentucky have been by B4B faculty.
- **36 percent** (approximately) of Kentucky start-up companies that were dependant on university generated technology have been created by B4B faculty.

Analysis of Progress on Program Goals and Outcome Measures

This section identifies research questions and indicators for measuring progress toward goal attainment.

Analysis of Fundraising/Annual Giving

The Kentucky Postsecondary Education Improvement Act of 1997 (HB 1) established aggressive goals for the University of Kentucky and the University of Louisville. By the year 2020, UK is to become a major comprehensive research institution ranked nationally in the top 20 public universities and UofL is to become a premier, nationally recognized, metropolitan research university. These goals challenged the universities on many fronts, not the least of which was in the area of private giving. In 1997, the University of Kentucky received $41 million and ranked 35th among public universities in terms of the amount of voluntary support given to the university from private sources (The Center for Measuring University Performance Annual Report entitled *The Top American Research Universities*). That same year, Michigan State University received $72 million in philanthropic support and ranked 20th among public universities. This means that annual giving at UK was $31 million below that of the 20th ranked institution at the time HB 1 was enacted. The University of Louisville faced a similar challenge. In 1997, UofL ranked 32nd among public universities in philanthropic support ($46 million), placing the university well below benchmark metropolitan, public universities, such as the University of California–San Diego, which received $88 million and ranked 17th.

When the Bucks for Brains program was created, one of the principal goals of program architects was to encourage private support of public higher education research activities. The mechanism for stimulating private giving was a matching component incorporated into program guidelines that required state funds to be matched with private donations. The program encourages private giving by enabling donors to "double their contributions" to the public universities by having those contributions matched dollar-for-dollar by the state. Both state and private funds are endowed and the proceeds are used to encourage research at the University of Kentucky and the University of Louisville and to strengthen key programs at Kentucky's comprehensive universities.

This report examines four research questions related to the goal of encouraging private giving to Kentucky public universities:

1) Have **levels of annual giving** to Kentucky public universities increased over the 10-year period since implementation of the Bucks for Brains program?

2) How does annual giving at Kentucky public universities **compare** to annual giving at **benchmark** institutions?

3) To what extent did the **Bucks for Brains** program **contribute** to increased levels of annual giving at Kentucky public universities?

4) How much **private support** of public higher education has been **leveraged** through the Bucks for Brains program?

The main indicator for gauging progress toward this goal is annual giving. Annual giving is defined as the amount of total voluntary support received by a university during the fiscal year, as reported in the Council for Aid to Education's (CAE) Voluntary Support of Education Survey (VSES). The VSES is recognized as the authoritative national source of information on private giving to higher education and private K-12 schools. The survey is administered on an annual basis and has been in operation for more than 40 years.

1. <u>Levels of Annual Giving</u> – Levels of annual giving to Kentucky public universities increased in the decade following Bucks for Brains program implementation. As can be seen in Table 1, between 1997 and 2006, annual giving to Kentucky research universities grew from $87.7 million to $128.6 million, or by 47 percent. Over the same time period, annual philanthropic support at the comprehensive universities increased from $11.0 million to $28.9 million, or by 162 percent. The largest dollar increase occurred at the University of Kentucky, which registered a $24.3 million increase for the period, and the largest percentage increase took place at Western Kentucky University (+699 percent).

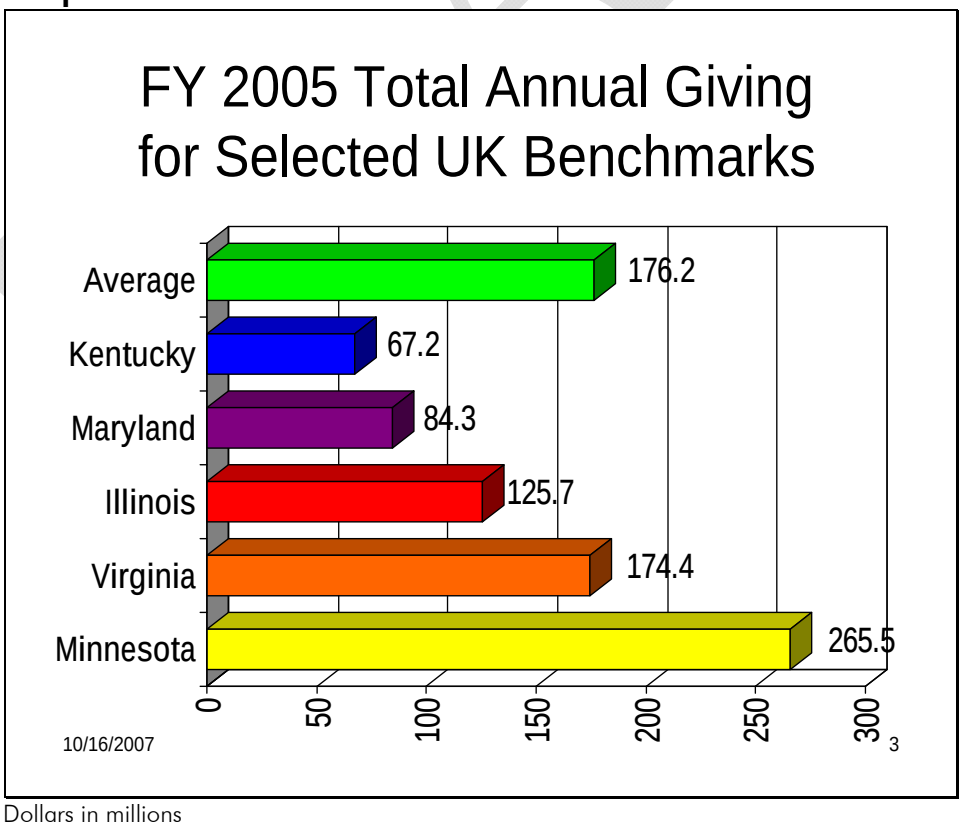
Table 1
Change in Annual Giving to Kentucky Public Universities
Between Fiscal Years 1997 and 2006 (dollars in thousands)

Institution	1997	2006	Dollar Change	Percent Change
University of Kentucky	41,383	65,648	24,265	59
University of Louisville	46,352	62,934	16,582	36
Sector Total	87,735	128,582	40,847	47
Eastern Kentucky University	4,081	6,683	2,602	64
Morehead State University	2,041	2,727	686	34
Murray State University	3,027	4,065	1,038	34
Western Kentucky University	1,877	15,002	13,125	699
Sector Total	11,026	28,913	17,887	162
Public University Total	98,761	157,495	58,734	59

These data do not include annual giving numbers for Northern Kentucky University or Kentucky State University, who either did not participate in VSES or did not provide data on a consistent basis.

2. <u>Benchmark Comparisons</u> – Despite an increase in annual giving between 1997 and 2005, the University of Kentucky did not move up in public university rankings of voluntary support and maintained its position relative to its benchmarks. In 1997, the University of Kentucky received $41.4 million and ranked 35th among public colleges and universities nationwide in annual philanthropic support (Center for Measuring University Performance data). Nine years later, in 2005, the level of annual giving at UK increased 62 percent to $67.2 million, but the university fell in public sector rankings to 39th. Compared to its benchmark institutions, the University of Kentucky maintained its relative position of second from the bottom for the period. Only the University of Maryland-College Park ($38.1 million) and the University of Georgia ($60.5 million) had lower levels of annual giving than UK in 1997 and 2005, respectively. These data are presented visually in Graph 1. As can be seen, the level of annual giving at UK in 2005 ($67.2 million) was $109 million below the benchmark average ($176.2 million).

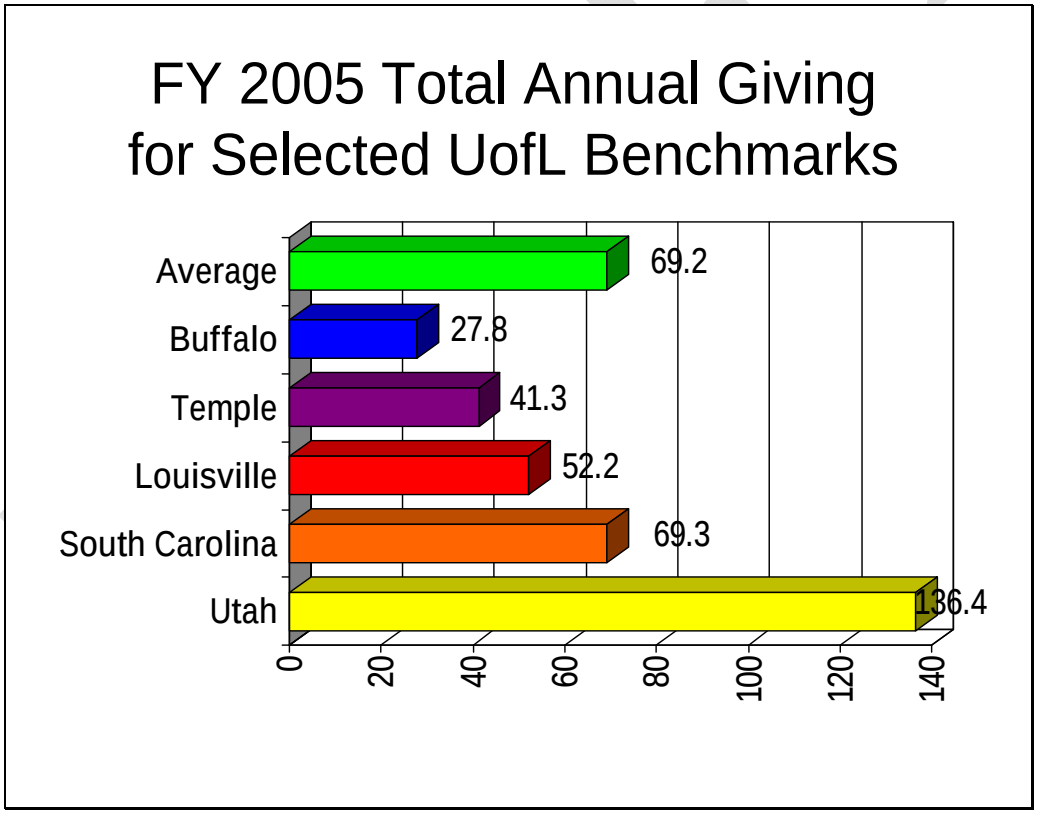
Graph 1



Dollars in millions

The University of Louisville lost ground both in public sector rankings of voluntary support and in comparison to its benchmarks. The level of philanthropic support at the University of Louisville increased from $46.4 million in 1997 to $52.2 million in 2005, or by 13 percent (Center for Measuring University Performance data). Despite the increase, UofL fell in public university rankings of annual giving from 32nd to 53rd during this period. In 1997, only five benchmark institutions reported a higher level of voluntary support than UofL. In 2005, nine benchmarks reported higher levels of annual giving. As can be seen in Graph 2, the University of Louisville is positioned near the middle compared to its benchmark institutions, or about $17 million below the benchmark average ($69. million). Annual giving among UofL benchmark institutions ranges from a low of $22.4 million at Stony Brook University to a high of $179.3 million at UNC-Chapel Hill.

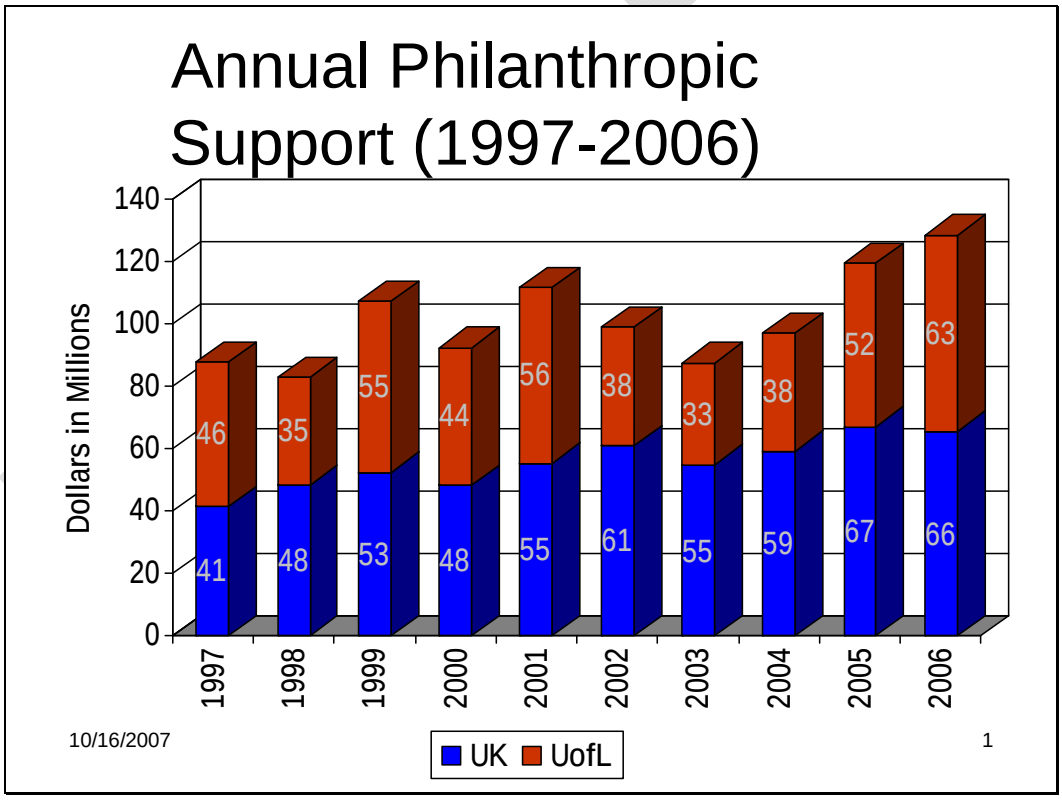
Graph 2



Dollars in millions

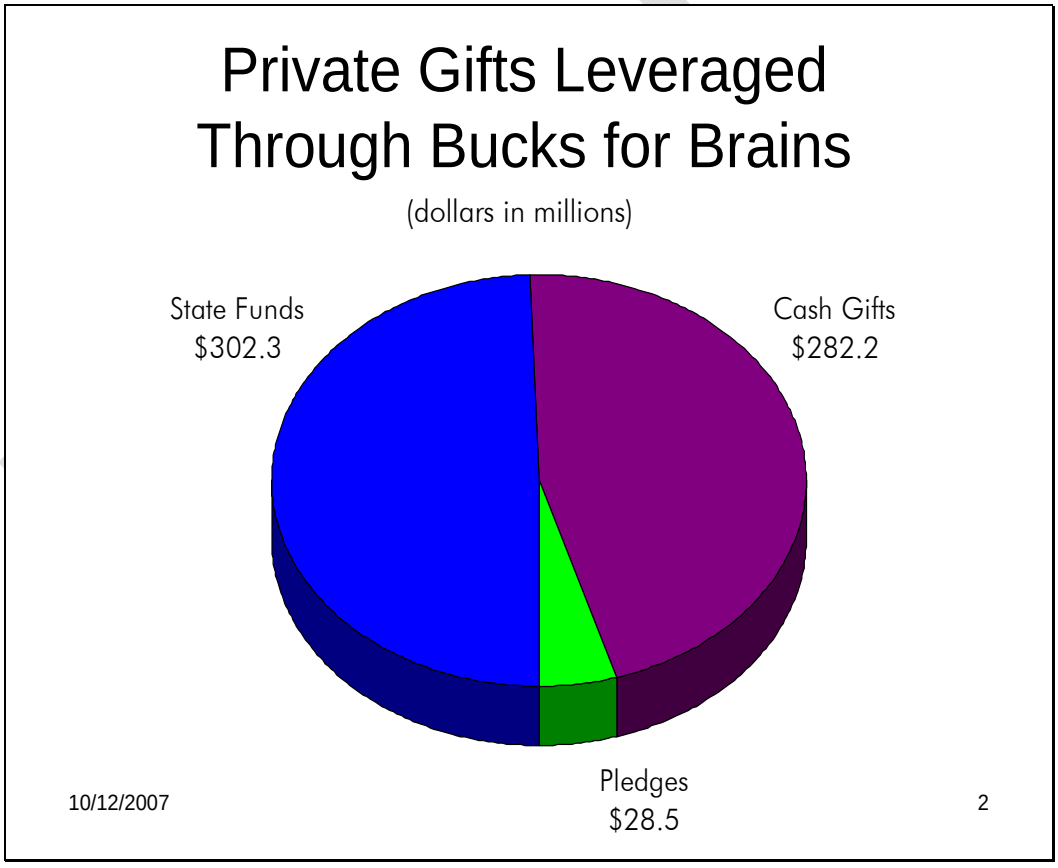
3. **<u>Bucks for Brains Contribution</u>** – Annual giving to Kentucky research universities has been uneven over the past decade, but peak periods of support tend to correspond with years in which the Bucks for Brains program received an appropriation. As can be seen in Graph 3, annual philanthropic support received by the state's research universities ranged from a low of $83 million in 1998 to a high of $129 million in 2006. There were three peak periods of growth in 1999, 2001, and 2004-2006. Using a time-series pattern matching approach, it is evident that levels of annual giving were higher during the years in which there was an appropriation for Bucks for Brains (i.e., 1999, 2001, and 2004) than they were in years when there was no appropriation. During years in which there was no Bucks for Brains appropriation, annual giving tended to hover between $80 million and $90 million. In the years where there was an appropriation, or in the years immediately following an appropriation, annual giving tended to exceed $100 million. 2005 and 2006 actually reflect the 2004 appropriation since UK and UofL required longer periods of time to identify new B4B donors or foundations to obtain the matched funds.

Graph 3



4. <u>Private Support Leveraged</u> – Since its inception in 1997, the Bucks for Brains program has been an unqualified success in generating private investment in public higher education research activities. As can be seen in Graph 4, through June 30, 2006, participating Kentucky universities received approximately $282.2 million in cash gifts and $28.5 million in pledges from private sources that were leveraged through the B4B program. These funds were matched with $302.3 million in dispersed state funds, which means that $584.3 million has already been added to public university endowments and another $28.5 million will be added when outstanding pledges are paid in full. Proportionately, pledges accounted for about five percent of total state and private funds as of fiscal year end. It is worth noting that the cumulative total of cash gifts and pledges generated through the program exceeds the amount of state match by over $8 million. This means the institutions are overmatching state funds with private gifts.

Graph 4



Analysis of University Endowment Growth

Analysis of University Endowments

A second major goal of the Bucks for Brains program architects was to grow public university endowments. In 1997, the University of Kentucky ranked 44th among public colleges and universities in terms of the relative size of its endowment assets (Center for Measuring University Performance rankings). That same year, the University of Louisville ranked 25th.

This analysis examines three research questions related to the goal of growing university endowments:

1. Has the market value of **endowment assets** at Kentucky public universities increased over the 10-year period since implementation of the Bucks for Brains program?

2. How does the market value of endowment assets at Kentucky public universities compare to **endowment** assets at **benchmark** institutions?

3. To what extent did the **Bucks for Brains** program **contribute** to the growth in market value of endowment assets at Kentucky public universities?

The primary source of data on endowment market values is the National Association of College and University Business Officers (NACUBO) Endowment Study. The endowment study is produced annually and typically has a response rate among U.S. colleges and universities that exceeds 80 percent. An additional source of data on endowment market values is the CPE Endowment Match Program Outcome Measures Report (also known as the FD-21 Report) submitted October 15 each year to the Council.

Table 2
Change in Market Value of Endowment Assets
Kentucky Public Universities (dollars in thousands)

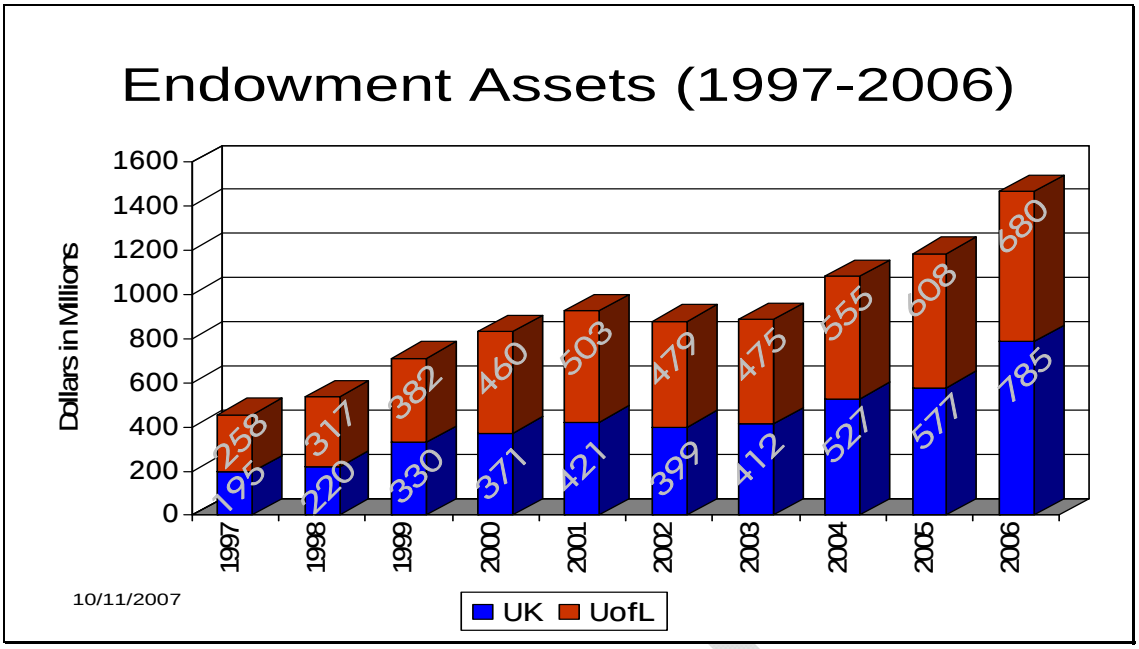
Institution	1997	2006	Dollar Change	Percent Change
University of Kentucky	189,008	785,196	596,188	315
University of Louisville	258,362	680,251	421,889	163
Sector Total	447,370	1,465,447	1,018,077	228
Northern Kentucky University	12,160	41,546	29,386	242
Western Kentucky University	19,317	85,723	66,406	344
Sector Total	31,477	127,269	95,792	304
Public University Total	478,847	1,592,716	1,113,869	233

These data do not include information for Eastern Kentucky University, Kentucky State University, Morehead State University, or Murray State University who either did not participate in the NACUBO survey or did not provide data on a consistent basis.

1. <u>Endowment assets</u> – The market value of endowment assets at Kentucky public universities has grown markedly in the 10-year period following implementation of the Bucks for Brains program. As can be seen in Table 2, between 1997 and 2006, the market value of research university endowments grew from $447.4 million to $1,465 billion, or by 228 percent. Over the same period, the market value of endowment assets at Kentucky comprehensive universities that participate in the NACUBO Endowment Survey increased from $31.5 million to $127.3 million, or by 304 percent. The University of Kentucky experienced the largest dollar increase for the period, with endowment assets increasing by $596.2 million (an increase of 315 percent) and Western Kentucky University recorded the largest percentage increase, with assets growing by 344 percent (an increase of $66.4 million).

Annual growth in endowment assets at the research universities is presented in Graph 5. The graph shows an overall upward trend in endowment market values, but also reveals a stair-step pattern characterized by periods of accelerated growth that correspond to time periods in which the Bucks for Brains program received an appropriation.

Graph 5



2. <u>Benchmark comparisons</u> – The University of Kentucky has made substantial progress in rankings of public college and university endowment assets. Between 1997 and 2005, UK moved up in the rankings of endowment assets among public colleges and universities from 44th to 25th, respectively (Center for Measuring University Performance data). Despite this accomplishment, UK must continue to be aggressive in its fundraising efforts in order to achieve the legislatively mandated top 20 status. For example, the market value of endowment assets at UK ($576.7 million) was $209.4 million below that of the University of Iowa ($786.1 million), which ranked 19th among public universities that year.

Despite the rise in rankings, UK has not gained relative to its benchmark institutions. In 1997, the University of Kentucky was positioned near the bottom (fourth from the bottom) relative to its benchmark institutions in terms of the market value of its endowment assets. Only Michigan State University ($179.4 million), the University of Maryland–College Park ($178.5 million), and the University of Arizona ($173.7 million) recorded asset values below UK ($189 million). Four out of five universities in the top quartile among UK benchmarks had endowment assets that exceeded $1 billion (Center for Measuring University Performance data). Nine years later, in 2005, UK's position did not change appreciatively. Despite considerable growth in the university's endowment assets (+205 percent), it remained near the bottom (fifth from the bottom) compared to its benchmarks. As can be seen in Table 3, four benchmark institutions reported asset values below that of UK (the University of Georgia, the University of Arizona, North Carolina State University, and the University of Maryland–College Park), and nine of the top ten had endowments that exceeded $1 billion.

These data are presented visually in Graph 6. As can be seen in the graph, the market value of endowment assets at UK in 2005 ($576.7 million) was well below the benchmark average ($1.4 billion) and even further behind upper-quartile institutions such as the University of Virginia ($3.2 billion).

Table 3
Change in Market Value of Endowment Assets
Between Fiscal Years 1997 and 2005 (dollars in thousands)

University of Kentucky Benchmark Institutions

Institutions	Endowment Assets 1997	Endowment Assets 2005	Percent Change
University of Michigan – Ann Arbor	1,909,282	4,931,338	158
Texas A&M University	2,803,890	4,567,265	63
University of Virginia	1,098,539	3,219,098	193
University of Minnesota – Twin Cities	1,135,542	1,968,930	73
Ohio State University – Columbus	767,716	1,726,007	125
University of Washington – Seattle	527,621	1,489,924	182
University of North Carolina – Chapel Hill	719,900	1,486,147	106
Purdue University – West Lafayette	856,693	1,340,536	56
University of Wisconsin – Madison	651,330	1,000,857	54
Michigan State University	179,400	906,342	405
Pennsylvania State University – University Park	399,645	866,788	117
University of Florida	400,582	835,698	109
University of Illinois – Urbana-Champaign	356,622	791,787	122
University of Iowa	357,142	786,100	120
University of California – Los Angeles	770,148	668,338	-13
University of Kentucky	189,008	576,721	205
University of Georgia	249,413	517,170	107
University of Arizona	173,652	393,400	127
North Carolina State University	210,706	380,541	81
University of Maryland – College Park	178,459	290,013	63

Note: Figures sorted by fiscal 2005 endowment asset values.

These data show that while UK has recorded impressive growth in endowment assets, it moved up only one spot in a rank order list of benchmark endowment assets.

The University of Louisville has climbed in public university rankings of endowment assets since implementation of the Bucks for Brains program. In 1997, the market value of endowment assets at UofL was $258.4 million and the university ranked 35th among public universities nationwide. Nine years later, in 2005, the university's endowment assets totaled $607.6 million and it ranked 24th. That same year, one of the university's benchmark peers, the University of Cincinnati, reported endowment assets of $1.032 billion and was ranked 13th among public universities.

The University of Louisville compares favorably with its benchmark institutions in terms of relative growth in endowment assets. Between 1997 and 2005, the market value of endowment assets at UofL increased by 135 percent. This increase was the fourth highest proportionate gain among the university's benchmark institutions. Only Stony Brook University (+272 percent), the University of California – Irvine (+142 percent), and the University of Utah (+139 percent) recorded a larger proportionate gain for the period. UofL also compares favorably to its benchmarks in terms of overall endowment size. In 2005, the university ranked fifth among its benchmarks in level of endowment assets. Only the University of Pittsburgh ($1.530 billion), the University of North Carolina – Chapel Hill ($1.486 billion), the University of Cincinnati ($1.032 billion), and the University of Iowa ($786.1 million) reported asset values that exceeded UofL's.

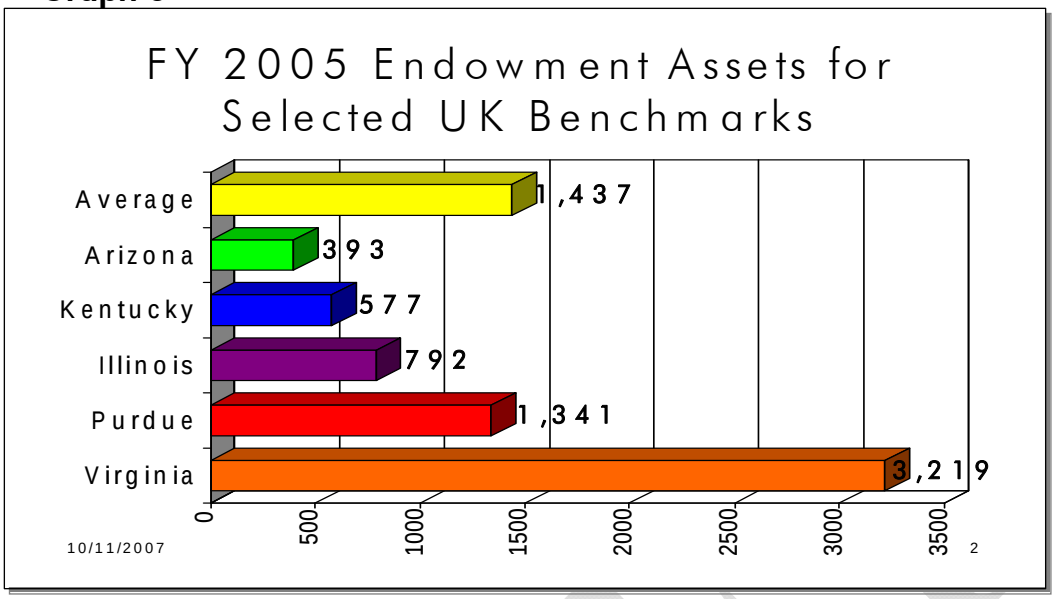
Table 4
Change in Market Value of Endowment Assets
Between Fiscal Years 1997 and 2005

University of Louisville Benchmark Institutions (dollars in thousands)

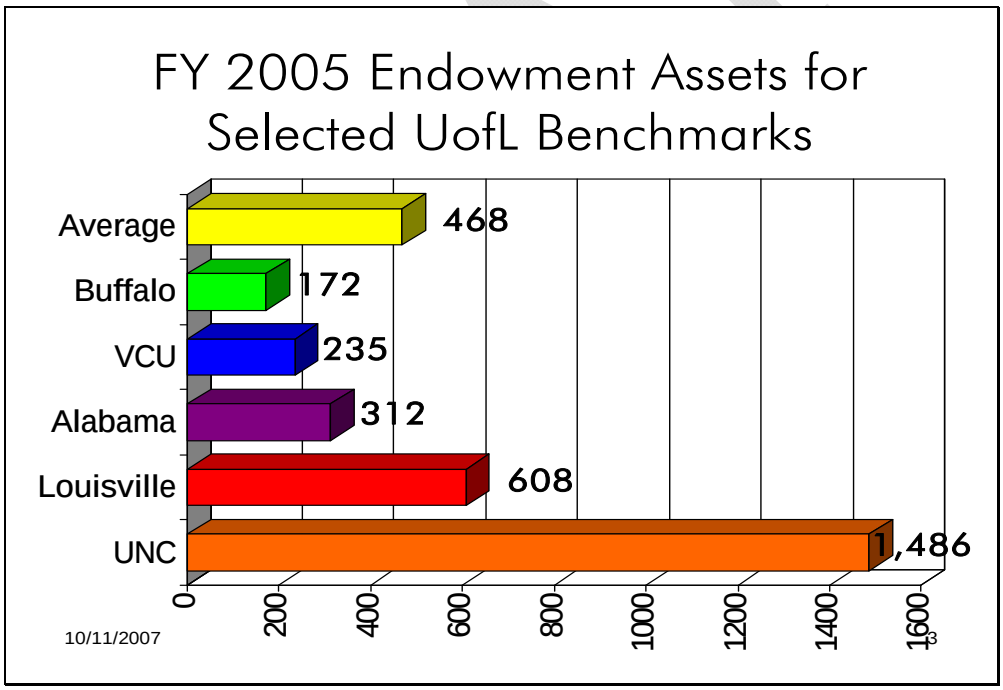
Institutions	Endowment Assets 1997	Endowment Assets 2005	Percent Change
University of Pittsburgh – Pittsburgh	651,738	1,529,884	135
University of North Carolina – Chapel Hill	719,900	1,486,147	106
University of Cincinnati – Cincinnati	680,827	1,032,124	52
University of Iowa	357,142	786,100	120
University of Louisville	258,362	607,636	135
University of Utah	192,201	458,531	139
University of Alabama – Birmingham	172,539	312,072	81
University of South Florida	146,501	298,241	104
University of South Carolina – Columbia	146,038	292,562	100
University of New Mexico – Albuquerque	155,499	245,234	58
Virginia Commonwealth University	152,181	235,279	55
University of California – San Diego	140,027	211,178	51
Temple University	102,838	196,165	91
Wayne State University	108,529	185,380	71
University at Buffalo	302,117	172,056	-43
University of California – Irvine	70,013	169,152	142
University of Illinois – Chicago	72,439	149,177	106
Stony Brook University	17,158	63,888	272

Note: Figures sorted by fiscal 2005 endowment asset values.

Graph 6



Graph 7



3. <u>Bucks for Brains Contribution</u> – The Bucks for Brains program has had a direct, positive impact on growth in endowment assets at Kentucky public universities. But, what has been the program's contribution to that growth? In this analysis, the program's contribution is calculated by dividing total additions to endowment principal attributable to the B4B program (both state funds distributed and cash gifts received) by the incremental increase in endowments assets for the period.

Between 1997 and 2006, Kentucky's research universities added $255.6 million in dispersed state funds and $236.5 million in private cash gifts to their endowments, for a total $492.1 million addition to endowment principal that can be attributed to the Bucks for Brains program. Over that same time period, the market value of research university endowments increased from $447.4 million to $1.465 billion, or by about $1.02 billion. This means that about half (48.3 percent) of the total increase in endowment assets for the period can be attributed to additions to endowment principal generated by the Bucks for Brains program. Sources of increase in market value include cash gifts received during the year, pledge payments, increased value of investment holdings, and unexpended investment earnings added to the corpus. This analysis includes only the first two components.

Analysis of Increases in Endowed Chairs and Professorships

Another short-term goal of the Bucks for Brains program was to increase the number of endowed chairs and endowed professorships at the public universities in areas of strategic benefit to the Commonwealth. In 1997, the University of Kentucky and the University of Louisville lagged behind their respective peer institutions in terms of the number of endowed chairs and professorships established. The added salary and staff support provided by endowment proceeds at other research universities placed UK and UofL at a competitive disadvantage when recruiting intellectual talent. One of the primary goals of the Bucks for Brains program was to level the playing field and place UK and UofL on equal footing in terms of their ability to recruit top researchers to Kentucky.

This analysis examines three research questions related to the goal of increasing the number of endowed chairs and professorships:

1) Has the number of **endowed chairs and professorships** at Kentucky public universities increased over the 10-year period since implementation of the Bucks for Brains program?

2) Has the growth in endowed chair and professorship positions at Kentucky public universities occurred in **disciplines of strategic benefit** to the Commonwealth?

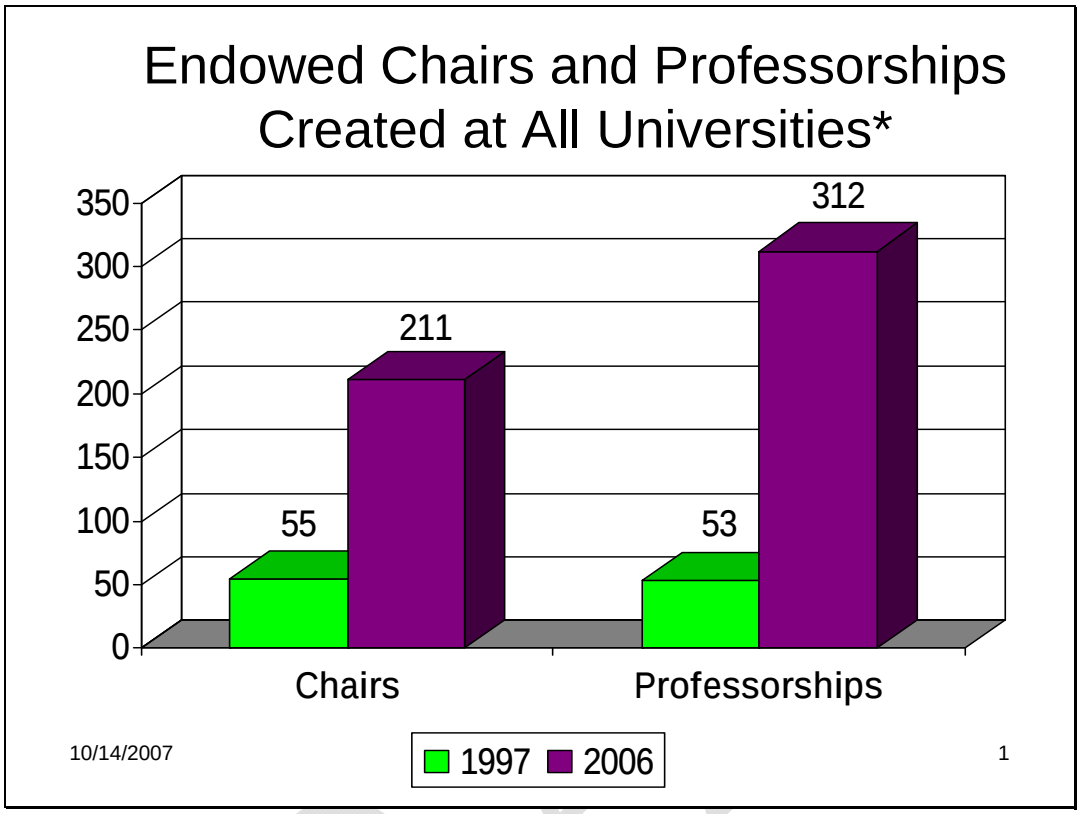
3) To what extent did the **Bucks for Brains** program **contribute** to the growth in endowed chairs and professorships at Kentucky public universities?

The primary source of data used to answer these questions is the Endowment Match Program Annual Summary Report submitted October 15 each year to the Council.

1. <u>Number of endowed chairs and professorships</u> – The number of endowed chairs and professorships at Kentucky public universities increased markedly in the decade following implementation of the Bucks for Brains program. Between 1997 and 2006, the number of endowed chairs at all universities increased from 55 to 211, or by 284 percent, and the number of endowed professorships increased from 53 to 312, or by 489 percent. These data are presented visually in Graph 8. This level of growth in intellectual talent would not have been possible without the Bucks for Brains program.

The University of Kentucky experienced the largest increase in endowed chairs for the period both in terms of number (+76) and percentage (+362 percent). Eastern Kentucky University recorded the largest number increase (+4) among the comprehensive universities, while Murray State University posted the largest percentage increase (+100 percent). UK recorded the largest number increase in endowed professorships (+192) and Western Kentucky University produced the largest percentage increase (+2,800 percent).

Graph 8



*Currently funded, but not all appointed.

2. <u>Disciplines of strategic benefit</u> – When the Governor and General Assembly created the Bucks for Brains program, they delegated to CPE responsibility for determining areas of concentration where program funds would be used. For each round of funding for the program, the Council promulgated and approved a set of guidelines that identified priority areas of strategic benefit to the Commonwealth. The most recent version of program guidelines, last revised July 19, 2004, specifies that at least 70 percent of program funds at the research universities must be endowed for the purpose of supporting Research Challenge Programs or academic disciplines contained within five new economy areas:

- Human Health and Development
- Biosciences
- Materials Science and Advanced Manufacturing
- Information Technologies and Communications
- Environmental and Energy Technologies

A similar requirement is contained in the guidelines for the comprehensive universities. At least 50 percent of program funds at the comprehensive universities must be used

to support Programs of Distinction or disciplines contained within the five new economy areas listed above. These clusters define important areas of opportunity for economic growth in Kentucky, which could become magnets for both talent and capital.

The public universities have utilized program funds in prescribed disciplines of strategic benefit to the Commonwealth. At the research universities, about 80 percent of dispersed 2002-04 program funds were endowed in CPE priority disciplines (EMP Annual Summary Report data). Specifically, as of June 30, 2006, UK and UofL combined had endowed about 58 percent of program funds in Human Health disciplines, 13 percent in Biosciences, 5 percent in Research Challenge program disciplines, and 4 percent in other new economy areas. At the comprehensive universities, about 50 percent of program funds were endowed in CPE priority areas, including 25 percent in Human Health disciplines, 15 percent in Programs of Distinction, and 10 percent in other targeted economic development areas. These proportions meet guideline requirements for the program.

3. <u>Bucks for Brains Contribution</u> – The Bucks for Brains program has been the primary catalyst for stimulating growth in endowed chairs at Kentucky public universities over the past decade. Between 1997 and 2006, the number of endowed chairs at participating universities increased from 55 to 211, respectively, or by 156 positions. According to the FD-21 Report data, 100 percent of that increase can be attributed to positions created using state funds accessed and private funds leveraged through the Bucks for Brains program. As of June 30, 2006, about three-fourths of all endowed chairs at the research universities, and over 90 percent of endowed chairs at the comprehensive universities were established using match program funds.

The program has been a major contributor to the increase in endowed professorships, as well. Between 1997 and 2006, the number of endowed professorships at participating universities increased from 53 to 312, or by 259 positions. About 88 percent of that increase can be attributed to the Bucks for Brains program (FD-21 Report data). As of fiscal year-end 2006, more than 70 percent of all endowed professorships at the research universities and over 80 percent of endowed professorships at the comprehensive universities were established using match program funds.

Analysis of Federal Research Expenditures

This analysis investigates four research questions pertaining to federal R&D expenditures generated by university faculty:

1) Has the **amount of federal R&D expenditures** generated by faculty at Kentucky public universities increased over the 10-year period since implementation of the Bucks for Brains program?

2) To what extent have Kentucky research universities moved up in **rankings of** federal R&D expenditures among **public universities** nationwide?

3) How does the amount of federal R&D expenditures generated by faculty at Kentucky public universities **compare** to the amount generated by faculty at **benchmark** institutions?

4) To what extent did the **Bucks for Brains** program **contribute** to the growth in federal R&D expenditures at Kentucky public universities?

The primary source of federal R&D expenditure data used in this report is the National Science Foundation Survey (NSF) of R&D Expenditures at Universities and Colleges. The NSF survey is widely recognized as a comprehensive source of information on separately budgeted research and development expenditures within academia in the United States. It is administered on an annual basis and components for major data elements are available starting in 1972. Additional sources include Center data (public university rankings and benchmark comparisons) and FD-21 Report data (preliminary 2006 estimates).

1. Amount of federal R&D expenditures – The amount of federal R&D expenditures generated by faculty at Kentucky research universities has increased dramatically since implementation of the Bucks for Brains program. Between 1997 and 2005, federal R&D expenditures at the research universities increased from $75.6 million to $209.9 million, or by 177 percent (Table 5). The University of Kentucky experienced the largest dollar increase among the research universities (+$80.6 million), and the University of Louisville recorded the largest percentage increase (+396 percent). Preliminary estimates indicate that the growth trend continued in 2006, with UK reporting $151.2 million in federal expenditures and UofL reporting $70.5 million (FD-21 Report data).

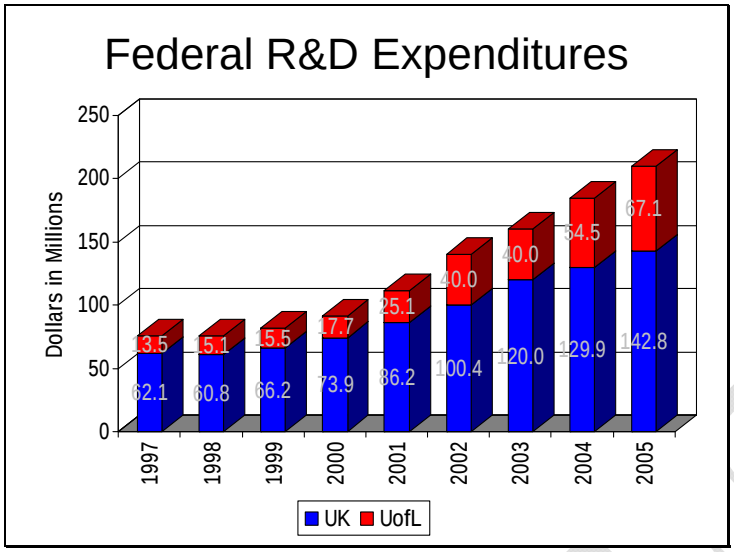
Table 5
Change in Federal R&D Expenditures at Kentucky Public Universities
Between Fiscal Years 1997 and 2005 (dollars in thousands)

Sector / Institution	Federal R&D1997	Federal R&D2005	Dollar Change	Percent Change
Research Institutions				
University of Kentucky	$62,128	$142,794	$80,666	130
University of Louisville	13,521	67,104	53,583	396
Subtotal	$75,649	$209,898	$134,249	177
Comprehensive Institutions				
Eastern Kentucky University	NA	$294	NA	NA
Kentucky State University	2,139	3,044	905	42
Morehead State University	451	1,693	1,242	275
Murray State University	422	1,310	888	210
Northern Kentucky University	132	768	636	482
Western Kentucky University	2,606	4,915	2,309	89
Subtotal	$5,750	$12,024	$5,980	109
Total	$81,399	$221,922	$140,229	173

Source: National Science Foundation

These data are presented visually in Graph 8. As can be seen in the graph, there is a consistently upward trend in federal R&D expenditures at the research universities every year since 1998. As will be demonstrated elsewhere in the report, this growth trend would not have been possible without the Bucks for Brains program.

Graph 9



The comprehensive universities also experienced a marked increase in the amount of federal R&D expenditures generated by their faculty. Between 1997 and 2005, federal expenditures at the comprehensives increased from $5.8 million to $12.0 million, or by 109 percent (Table 5). Western Kentucky University recorded the largest dollar increase for the period (+$2.3 million), and Northern Kentucky University recorded the largest percentage increase (+482 percent). Preliminary estimates for 2006 show continued growth in federal expenditures at two institutions. Eastern Kentucky University reported $3.8 million in federal expenditures in 2006 and Western Kentucky University reported $7.3 million (FD-21 Report data).

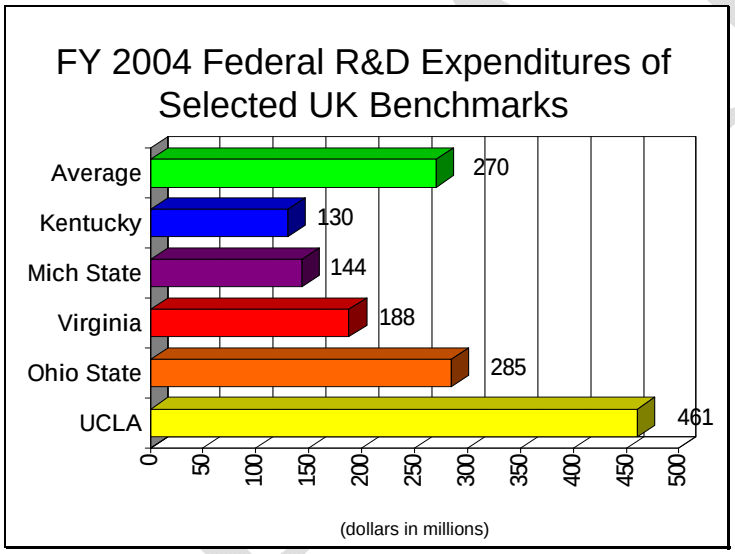
2. <u>Public University Rankings</u> – The University of Kentucky experienced a modest climb in public university rankings of federal R&D expenditures in the years following Bucks for Brains program implementation. Between 1997 and 2004, the amount of federal R&D expenditures generated by UK faculty grew from $62.1 million to $129.9 million, respectively, and the university moved up in rank from 45th to 40th (Center for Measuring University Performance data). This ascension shows that UK is progressing toward its HB 1 goal, but still a gap remains. In 2004, the University of Florida generated $221.9 million in federal R&D expenditures and ranked 20th among public universities nationwide. This means that the gap between the 20th ranked institution and UK in 2004 was $92.0 million.

During this same period, the University of Louisville recorded a marked increase in public university rankings of federal R&D expenditures. In 1997, UofL faculty generated $13.5 million in federal expenditures and the university ranked 119th among public universities nationwide (Center for Measuring University Performance

data). Seven years later, in 2004, the university generated $54.5 million in federal expenditures and ranked 87th. Despite this impressive climb, UofL still lags behind other metropolitan universities in terms of generating federal research dollars. For example, federal expenditures at the University of Pittsburgh in 2004 were $394.4 million, which ranked the university 7th among public institutions. That same year, the University of Cincinnati generated $195.0 million in federal expenditures and ranked 26th. The gap between UofL and these universities is $339.9 million and $140.5 million, respectively.

3. <u>Benchmark Comparisons</u> – The University of Kentucky compares very favorably to its benchmark institutions in terms of percentage increase in federal R&D expenditures. Between 1997 and 2004, federal research expenditures at UK grew by 109 percent. This increase was the fifth highest percentage gain among its benchmark institutions. Only the University of Florida (+135 percent), Ohio State University – Columbus (+132 percent), the University of Virginia (+128 percent), and the University of California – Los Angeles (+114 percent) recorded a higher percentage increase in federal expenditures for the period.

Graph 10



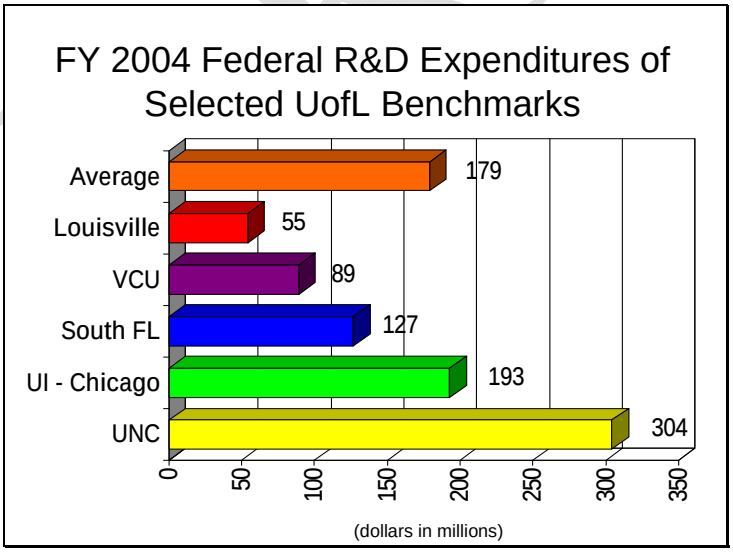
Despite the relatively large percentage increase, UK did not gain much ground in dollar terms relative to its benchmarks. In 1997, the University of Kentucky recorded the second lowest dollar amount of federal R&D expenditures ($62.1 million) of any of its benchmarks. Only the University of Georgia generated a lesser amount of federal expenditures ($54.4 million) that year than UK. Seven years later, in 2004, university faculty generated $129.9 million in federal R&D expenditures and the university moved up one spot among its benchmarks. The University of Georgia remained at the

bottom ($96.3 million), and UK passed NC State University (103.6 million) to post the third lowest level of expenditures among its benchmarks.

In the seven years following Bucks for Brains program implementation, the University of Louisville posted one of the highest proportionate gains in federal R&D expenditures of any public university in the nation. Between 1997 and 2004, federal research expenditures at UofL increased by 303 percent. Only five public universities (among those with federal expenditures that exceeded $20 million in 2004) recorded a larger percentage increase in federal expenditures for the period than did UofL. Given the magnitude of this increase, it is not surprising that the University of Louisville was among the leaders in federal expenditure growth compared to its benchmark institutions. The university's 303 percent increase represents the second highest proportionate increase among its benchmark institutions. Only the University of South Florida posted a larger gain for the period (+308 percent).

While this proportionate gain shows tremendous progress, the university continues to rank near the bottom in dollar terms relative to its benchmarks. In 1997, UofL faculty generated $13.5 million in federal R&D expenditures and the university was positioned at the bottom compared to its benchmark peers. In 2004, university faculty produced $54.5 million in federal expenditures and UofL moved up one spot (to second from the bottom) compared to its benchmarks. Only Temple University received a lesser amount of federal expenditures in 2004 than did UofL. This reiterates a familiar storyline throughout this report. Kentucky universities are progressing toward their HB 1 goals, but benchmark competitors are not standing still.

Graph 11



4. <u>Bucks for Brains Contribution</u> – In preceding paragraphs, it was demonstrated that federal R&D expenditures at Kentucky public universities have increased over the past decade. But to what extent did the Bucks for Brains program contribute to that growth? In this analysis, the proportion of university federal R&D expenditures generated by Bucks for Brains faculty is used to estimate the program's contribution to expenditure growth. Specifically, the cumulative amount of federal expenditures generated by B4B faculty between 2003 and 2006 (FD-21 Report data is available beginning in 2003) is divided by federal expenditures generated for the university.

The Bucks for Brains program has contributed to the growth in federal R&D expenditures at Kentucky public universities. Between 2003 and 2006, the state's public research universities generated a cumulative total of $775.9 million in federal R&D expenditures. Of that total, $136.6 million, or 18 percent, was generated by Bucks for Brains faculty. Proportionately, program faculty at the University of Louisville generated a larger percentage of the university's federal expenditures than did program faculty at the University of Kentucky. Over the four-year period, B4B faculty at UofL generated a cumulative total of $57.8 million in federal expenditures, or about 25 percent of the $232.0 million university total. At UK, program faculty generated $78.8 million in federal expenditures, or about 15 percent of the $543.9 million university total.

Analysis of Extramural Research Expenditures

As previously mentioned, HB 1 established aggressive 2020 goals for the University of Kentucky (i.e., top 20 public university) and the University of Louisville (i.e., premier, metropolitan research university). Recognizing the importance of ambitious research agendas for achieving these goals, the Kentucky Department of Commercialization and Innovation, the Council on Postsecondary Education, and UK and UofL officials developed a goal of reaching $500 million in extramural academic R&D expenditures by the year 2010. Extramural R&D expenditures include all sources of research awards that originate outside the university (i.e., federal, state and local, industry, and other).

This analysis examines two research questions related to the goal of increasing extramural R&D expenditures generated by university faculty:

1) Has the annual **amount of extramural R&D expenditures** generated by faculty at Kentucky public universities increased over the 10-year period since implementation of the Bucks for Brains program?

2) To what extent did the **Bucks for Brains** program contribute to the growth in extramural R&D **expenditures** at Kentucky research universities?

The main source of extramural expenditure data used in this report is the NSF Survey of R&D Expenditures at Universities and Colleges. In addition, the CPE Endowment Match Program Outcome Measures Report (or FD-21 Report) is used to provide preliminary 2006 estimates of extramural expenditures at Kentucky public universities and to calculate the contribution of Bucks for Brains faculty to extramural expenditure growth.

1. <u>Amount of Extramural R&D Expenditures</u> – The annual amount of extramural R&D expenditures generated by Kentucky research university faculty has increased during the past decade. Between 1997 and 2005, extramural R&D expenditures generated by research university faculty increased from $105.2 to $309.7 million, or by 194 percent (Table 6). The University of Kentucky recorded the largest dollar increase for the period (+$132.8 million), while the University of Louisville recorded the largest percentage increase (+318 percent). The upward trend continued in 2006, with UK reporting $226.1 million in extramural expenditures, and UofL reporting $101.3 million (FD-21 Report data). Combined extramural R&D expenditures at the research universities grew to $327.4 million in 2006, representing a 211 percent increase since 1997. These data are presented visually in Graph 12. As can be seen in the graph, there has been a consistently upward trend in extramural research and development expenditures at the research universities since 1997.

Table 6
Change in Extramural R&D Expenditures
Between 1997 and 2005

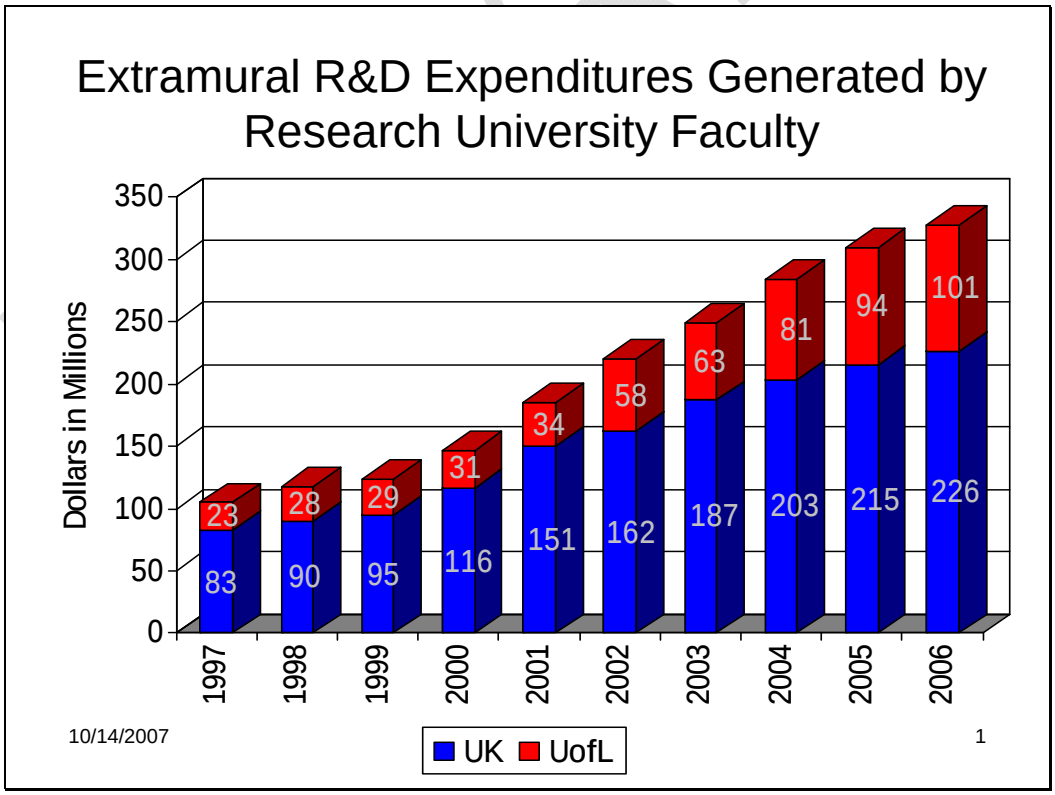
(dollars in thousands)

Research Universities

Funding Source	Extramural R&D 1997	Extramural R&D 2005	Dollar Change	Percent Change
Federal	75,649	209,898	134,249	177
State & Local	7,446	50,509	43,063	578
Industry	14,781	10,643	(4,138)	-28
Institutional	53,070	125,294	72,224	136
Other	7,292	38,656	31,364	430
Total	158,238	435,000	276,762	175
Minus: Institutional	53,070	125,294	72,224	136
Extramural	105,168	309,706	24,538	194

Source: National Science Foundation

Graph 12



The State's comprehensive universities also experienced growth in extramural R&D expenditures. Between 2000 and 2005 (consistent, reliable data are not available prior to 2000), extramural expenditures at the comprehensive universities increased from $7.7 million to $14.7 million, or by 91 percent (Table 7). Western Kentucky University recorded the largest dollar increase for the period (+$2.8 million), and Northern Kentucky University recorded the largest percentage increase (+1,591 percent). Preliminary estimates for 2006 show continued growth in extramural expenditures at Murray State University, which reported $2.1 million in expenditures in 2006 (FD-21 Report data).

Table 7
Change in Extramural R&D Expenditures
Between 2000 and 2005 (dollars in thousands)

Comprehensive Universities

Funding Source	Extramural R&D 2000	Extramural R&D 2005	Dollar Change	Percent Change
Federal	6,500	12,024	5,524	85
State & Local	1,009	1,942	933	92
Industry	187	619	432	231
Institutional	1,837	2,549	712	39
Other	13	131	118	908
Total	9,546	17,265	7,719	81
Minus:				
Institutional	1,837	2,549	712	39
Extramural	7,709	14,716	7,007	91

Source: National Science Foundation

2. <u>Bucks for Brains Contribution</u> – The Bucks for Brains program has contributed to growth in extramural R&D expenditures at Kentucky research universities. Between 2003 and 2006, research university faculty generated a cumulative total of $1.173 billion in extramural expenditures. Of that total, $145.7 million, or about 12 percent, was produced by Bucks for Brains faculty members (FD-21 Report data). As was the case with federal expenditures, program faculty at UofL generated a larger share of university total extramural expenditures, than did program faculty at UK. At UofL, B4B faculty produced $75.1 million in extramural expenditures over the four-year period, or about 22 percent of the cumulative $338.8 million university total. Program faculty at UK generated $70.6 million in extramural expenditures, or about 9 percent of the

cumulative $834.3 million university total. This variance has more to do with differences in respective size of the professoriate at each institution than it does with differences in B4B faculty productivity.

Featured Anecdotal Institutional Profiles

> "I recall spending an evening to meet some of the Bucks for Brains professors. It was an exhilarating experience to talk with such bright folks who were so happy to be in Kentucky and who thought that Kentucky had a great opportunity to make some real contributions through research. Several of the medical professors talked about their hope of finding cures for diabetes and cancer and other devastating illnesses that are so prevalent in Kentucky."
>
> *Speaker of the House, Jody Richards, Kentucky General Assembly*

The following anecdotal profiles provide a small sample of the many successful enterprises that have been generated as a result of the Bucks for Brains initiative. More comprehensive institutional reports for each of the public universities may be reviewed by accessing the online version of this report on the Council on Postsecondary Education Web site at http://cpe.ky.gov.

University of Kentucky Bucks for Brains Profiles

The University of Kentucky has been allocated a total of $200 million in state funds through the three rounds of funding of the Bucks for Brains program. The university has been able to generate equal amounts of private funding to meet the match requirements of the B4B program.

> "Bucks for Brains has made a substantial difference in the quality of the University of Kentucky. Its impact can be measured in the quality of our faculty, the breadth of our research enterprise, and the strength of our endowment. The impact also can be measured in the culture of the university community. There were plenty of skeptics on our campus in 1997 who believed the top 20 mandate was merely hollow rhetoric. But over the last 10 years, we have established hundreds of new chairs and professorships and used them to recruit and retain researchers who, in previous years, would not have considered a career at the University of Kentucky. Now, we are a magnet that attracts the kind of serious scholarship necessary to establish a world-class university. And with those efforts, we have cultivated a university community confident in our prospects for achieving the aggressive target of top 20 status."
>
> *Dr. Lee T. Todd, Jr., President, University of Kentucky*

Some examples of current University of Kentucky Bucks for Brains initiatives include the following:

Future Treatments for Spinal Cord Injury

The University of Kentucky's Spinal Cord and Brain Injury Research Center (SCoBIRC) is focused on effective treatments for the estimated 11,000 Americans who suffer a spinal cord injury each year and the 1.5 million who sustain traumatic brain injuries. After traumatic injury to a person's brain or spinal cord, time is the major factor in the ultimate severity of that injury. Much of the damage to the injured nervous tissue occurs during the first several hours and days following the incident, which suggests that "secondary injury", might be prevented by early treatment with neuroprotective drugs.

Edward Hall, an endowed chair and director of the UK Spinal Cord & Brain Injury Research Center, is leading a team of scientists who are testing various drugs that might inhibit secondary injury to the brain or spinal cord. The team includes Jim Geddes, Patrick Sullivan, Kathryn Saatman, and Alexander Rabchevsky (SCoBIRC), Stephen Scheff (Sanders-Brown Center on Aging) and Joe Springer (physical medicine and rehabilitation).

Hall was a pioneer in the discovery and development of the steroid drug methylprednisolone, the only approved drug that has been shown to be effective for the treatment of spinal cord injury. He is hopeful that the protective effects of the newer drugs being tested by his group will far surpass the benefits of methylprednisolone.

New Treatments for Nicotine and Methamphetamine Abuse

Dr. Linda Dwoskin, a professor of pharmaceutical sciences and U. S. Surgical-Pfizer Endowed Professor at UK, is currently involved in two related projects-one focused on nicotine and the other on methamphetamine. She is teaming up with UK colleagues Peter Crooks, George A. Digenis Professorship/Chair in Drug Design and Discovery at the UK School of Pharmacy and Dr. Michael Bardo, UK Department of Psychology.

The research team is trying to find small molecules that block receptors and transporter proteins responsible for the "reward" associated with nicotine and methamphetamine use. These molecules might serve as novel therapeutic agents to help those who are addicted to drugs.

The nicotine study is partially supported by a $6 million grant from The National Institutes of Health (NIH) and is the largest single award ever received by the College of Pharmacy. In the methamphetamine project, research is focused on lobeline which when fed to rats, stops the craving for methamphetamines. In 2002, Crooks and

Dwoskin began working with investors to form a spin-off company, Yaupon Therapeutics Inc., to further develop and market lobeline.

University of Louisville Bucks for Brains Profiles

"The consequences and impact of the Bucks for Brains program have been far-reaching… Economic development is advanced at the University of Louisville through enhanced pure research dollars, the multiplier effect of related research investment, and the commercialization of translational research. Most importantly the quality of life for Kentuckians is improved when citizens are able to be treated locally for diseases such as Parkinson's."

Dr. James Ramsey, President, University of Louisville

During the three rounds of B4B funding, the University of Louisville has been allocated a total of $1 million of state funding to be matched by private funding through the Endowment Match (or Bucks for Brains) program. This state funding has been instrumental in increasing U of L's endowment, enhancing funded research and in attracting world class researchers to the university. Such growth is a key factor in the university's legislatively mandated goal of becoming a premier metropolitan research university.

Some examples of currently funded Bucks for Brains initiatives at the University of Louisville include the following:

Charles A. Grosscurth Biomechanics Chair in Bioengineering – J. B. Speed School of Engineering

<u>Research in Biomechanical Engineering</u>

Gina Bertocci, Ph.D. is Associate Professor of Mechanical Engineering and Pediatrics and Director of the Injury Risk Assessment and Prevention Laboratory at U of L. She studies the biomechanics of injury and rehabilitation and focuses primarily on child abuse and wheelchair transportation safety.

In the child abuse area, her research team is at work using engineering techniques and medical principles to delineate between abusive and accidental injuries. Bertocci's wheelchair transportation safety research utilizes computer simulation and testing to understand the loads that a wheelchair is exposed to in a crash and the level of injury risk that someone seated in a wheelchair might experience. This work will allow manufacturers to design safer wheelchairs that protect occupants during a crash.

Jewish Hospital Heart and Lung Institute – Distinguished Chair of Cardiology

<u>Treating Cardiovascular Disease</u>

Roberto Bolli, M.D., is Director of the Division of Cardiology and U of L's Institute for Molecular Cardiology. His research focuses on preventing the damage caused during heart attacks by studying ischemic preconditioning, the phenomenon in which heart muscle exposed to brief periods of stress becomes resistant to the tissue death that might be caused by a heart attack.

In 2005, Bolli led a U of L team that was awarded an $11.7 million grant from the National Institutes of Health to continue to build upon this research. Since his arrival at U of L in 1994, Bolli has brought over $50 million in NIH grants to the university. Dr. Bolli is now working to determine whether gene therapy or other strategies that increase myocardial nitric oxide and carbon monoxide levels result in long-term protection against heart failure.

Eastern Kentucky University Bucks for Brains Profile

Long known as the School of Opportunity, Eastern takes seriously its mission to broaden educational access for talented, promising students who need financial assistance to open the doors of academe. The Bucks for Brains program has provided significant assistance in EKU's quest to expand its mission and further enrich the lives of those it serves. Amidst the first capital campaign in Eastern's history, the Bucks for Brains two-for-one funding premise caught the attention of potential donors; 2,566 EKU alumni and friends made first-time gifts to the university.

One example of a B4B initiative at EKU is the following:

<u>Research & Enhanced Teaching</u>
The *Hazel Wilson Memorial Endowed Chair in Human Environmental Sciences* was made possible through a donation of $500,000.00 from 1934 EKU alumnus Vernon Wilson in memory of his wife of 50 years. The Bucks for Brains program matched those funds dollar for dollar.

"Eastern gave us a chance. I was from a very poor county, but higher education was my ticket to success."

Vernon Wilson

Dr. Jacqueline Jensen is the first Hazel Wilson Endowed Chair. The endowment enables her to conduct research in middle school, high school and college classrooms. Although her primary goal is to enhance teaching across the state, Dr. Jensen has studied and published articles about professionalism and professional ethics, the application of constructivist learning theories, and the recruitment of students into Family and Consumer Sciences Education. Dr. Jensen is a Fellow of the Kappa Omicron Nu Leadership Academy and is currently at work on a book that documents student reasoning of ethical dilemmas.

Western Kentucky Profile

"Endowments are the way of ensuring that the university will continue in perpetuity. Endowments for professorships allow us to attract and retain quality faculty who will continue to enhance already strong programs. WKU currently has 27 endowed faculty positions."

Dr. Gary Ransdell – President of Western Kentucky University

One example of WKU's B4B endowed professorships is the following:

Physics Research and Outreach
Dr. Charles McGruder serves as the *William McCormack Professor in Physics,* a named professorship created through the Regional University Excellence Trust Fund that matched donated funds from Dr. William McCormack, a 1957 graduate of Western Kentucky University. Serving as the *William McCormack Professor in Physics*, Dr. McGruder receives a reduced teaching load that enables him to conduct research, travel in pursuit of his research and participate in nation wide academic and community service.

Dr. McGruder participates in three major national initiatives:

- WKU's project to develop a worldwide network of robotically operated small telescopes,
- a National Aeronautics and Space Administration (NASA) grant to work with historically black colleges to encourage students of color to pursue doctoral degrees in the sciences,
- and, consult with NASA to organize an annual conference aimed at engaging minority students in science research.

Morehead State University Profile:

Morehead State University has utilized the Regional University Excellence Trust Fund to create specific endowments within colleges, to establish new scholarships, to dramatically expand fundraising priorities, to emphasize scholarship/research, to promote diversity and to fund new academic programs and P-16 partnerships.

One example of an innovative B4B program at Morehead is the following:

W. Paul and Lucille Caudill Little Endowed Chair

Theater in the Schools Program
With a gift from the W. Paul and Lucille Caudill Little Foundation matched through the Regional University Excellence Trust Fund, an endowed chair was established to create a unique "Theater in the Schools" program.

Dr. Robert Willenbrink, professor of theater and Chair of the Department of Communication and Theater at Morehead University was selected as the endowed chair to oversee the development of a traveling performance troupe appropriately named, The *Little Company*. The mission of the troupe is to annually produce plays and educational materials that tour the elementary, middle and secondary schools throughout the region and the state. Educational enhancement materials include study guides that incorporate lesson plans, glossaries and theater activities.

The Little Company promotes academic excellence and provides unique artistic opportunities for performers and audiences alike while exposing students, many for the first time, to the magic of live theater. The program continues to expand as the following chart illustrates.

Year	Participating Schools	Number of Performances/Workshops	Participating Students
2005	44	47	9,650
2006	56	59	10,650
2007	98	96	26,000

Murray State University Profile

The Regional University Excellence Trust Fund has had various positive impacts on Murray State's academic programs and on the surrounding community and region. The program has made possible the creation of two endowed chairs, four professorships, 21 endowed scholarships and three mission support endowments.

One example of a B4B initiative at Murray State University is the following:

Financial Planning Programs and Certification

The *Arthur J. Bauerenfeind Endowed Chair in Investment Management* was the first endowed chair established at Murray State University as a result of the Bucks for Brains program. Dr. David Durr, who currently holds the chair, has a PhD in Finance from the University of North Texas. The *Bauerenfeind Endowed Chair* has resulted in the creation of a significant new academic program, the financial planning concentration, within the Department of Finance and Economics. Dr. Durr registered the new program with the Certified Financial Planner (CFP) Board of Standards, an independent certifying organization. The CFP Board awards designated certification for individuals who meet its education, examination, experience and ethics requirements.

In an effort to create sustained cooperative relationships with financial services companies, Dr. Durr works to enhance regional recognition for the Murray State financial planning program through speaking engagements, seminars, and meetings. Recently Dr. Durr developed a student internship program in partnership with Security Benefit, a nationally recognized leader in financial services. This program provides undergraduate and graduate students with relevant hands-on work experience relevant to their academic and career goals.

Northern Kentucky University Profile

The Bucks for Brains program has transformed Northern Kentucky University by enabling the institution to further advance core values, broaden access to higher education, strengthen undergraduate research, develop entrepreneurial workforce skills, enhance scholarly excellence in selected areas and encourage community engagement.

One example of the successful investment of B4B funding at NKU is the following:

Strengthening Undergraduate Research

The Bucks for Brains program has played a pivotal role in elevating NKU's *Center for Integrative Natural Science and Mathematics (CINSAM)*, to new heights. The mission of CINSAM is to enhance the teaching, learning, and applied science and mathematics at NKU and surrounding K-12 schools. Additionally, the new Dorothy Westerman Herrmann Science Center has secured B4B endowed funds to ensure that state-of-the-art lab and teaching equipment will remain current. Faculty and students have benefited from endowment gifts such as that awarded by the Rieveschl Foundation to purchase science instrumentation for the Center.

The research activity of students in CINSAM-related departments has more than tripled over the past seven years. Students regularly present their research findings at local, state and national meetings and several have published their findings in scholarly professional journals. B4B endowment gifts have also created several endowed professorships and programs in the sciences at NKU including *The Ashland Inc. Professor of Integrative Science*, held by Dr. Hazel Barton, and the *Drs. Evan and Lindsay Stein Professor of Bio-computing* held by Kevin Kirby.

Kentucky State University Profile

Kentucky State University experienced its most successful fund-raising campaign by utilizing the matching opportunities provided by the Regional University Excellence Trust Fund. Donors enthusiastically responded and the university exceeded its matching requirements by over $225,000.00. Funds generated from the Bucks for Brains program support KSU's mission to prepare a diverse student population to compete in a global society.

Successful Fundraising Campaign

Kentucky State University has utilized Bucks for Brains funding to complete a highly successful fund-raising campaign entitled "Kentucky's Vision 2020 Endowment Match Campaign". The campaign resulted in the creation of three endowed professorships in business, math/science, and education, an endowed library fund and endowed student scholarships. The creation of the three endowed professorships has been

complemented by the development of unique academic programs and the construction of a new genetics laboratory.

The Future

"The Bucks for Brains program is a significant part of Kentucky's larger effort to create systemic reform of higher education. Fundamental to the reform effort was the desire to jump start state level university research to facilitate economic development and create new economy jobs for Kentuckians."

President Gary Cox
Association of Independent Kentucky Colleges and Universities

The Bucks for Brains program was designed as an important transformative feature of Kentucky's 1997 postsecondary education reform initiative. The overarching goal of the B4B program was to attract and retain world class faculty to engage in cutting edge research within the state. By stimulating the quality and quantity of Kentucky-based research and by attracting significant increases in external funds, the Commonwealth hoped to enhance its capacity to commercialize that research and eventually create new companies. The state's universities would serve as incubators for economic innovation and growth.

This report outlines the many tangible successes of the Bucks for Brains initiative and demonstrates the future challenges Kentucky faces in realizing the HB 1 goals of national prominence and ranking for UK and UofL. Both research institutions and the comprehensive public universities are to be commended for their respective and formidable efforts to rise successfully to the challenges inherent in the implementation of the Bucks for Brains program.

As Kentucky's postsecondary education institutions strive to appropriately prepare students to compete and to excel in the twenty-first century, we must remember that other states and other countries are also investing in the future. In order to remain competitive in the future, Kentucky must continue to invest in educational opportunity for all citizens. Additionally, Kentucky must continue to invest in the creation of superior academic institutions that are nationally recognized for research and graduate programs.

"Kentucky can be competitive in the new economy, but only if it has the intellectual and research infrastructure to support such an economy…The enhancement of Kentucky's research and graduate programs will make the state competitive in the new economy and propel Kentucky corporations and businesses to a new echelon among competitors. A first-class research university will be a magnet for economic development and should be a goal of postsecondary reform efforts."

Postsecondary Education in Kentucky: An Assessment, March 1997

Summary and Conclusions

Kentucky's innovative $350 million investment in the Bucks for Brains initiative has yielded significant positive results particularly with respect to the shorter term goals established for the program.

- Private donations to public universities have increased dramatically both in terms of the total dollar amounts generated and the number of first-time donors to each of the institutions.
- Public university endowments have grown substantially due to state and private matched contributions.
- Endowed chairs and professorships have increased significantly.
- Intellectual capital has been enhanced at public higher education institutions through the addition of world class faculty who have been recruited through the Bucks for Brains program.
- Notable increases in externally funded research have occurred through the Bucks for Brains program.
- Significant patent applications, licensing and options activities have been generated by the recently appointed Bucks for Brains endowed faculty.
- In 2006 Bucks for Brains faculty created more than one third of university-generated state-up companies.

In order to sustain the impact of these very positive short and long term trends and to realize the intended goals of HB 1, additional future funding of the Bucks for Brains program appears to be warranted. Indeed, without the Bucks for Brains program, Kentucky's specific HB 1 goals to have a top 20 comprehensive research university and a premier, nationally recognized metropolitan research university would be virtually unattainable.

As the data analyzed within this report demonstrates, even with the significant and notable financial impact of the B4B program on fundraising, endowment size and federal and external research, UK and UofL continue to trail behind many of their comparable benchmark institutions. The HB 1 goals particularly for UK and UofL warrant sustained and significant public and private financial investment in research, intellectual talent, endowment growth, facilities and academic quality.

Recommendations

The analysis of B4B institutional and program data, interviews with program architects and institutional personnel, comparisons with benchmark higher education institutions, and external analysis of the multiplier effect of enhanced research funding and activity at Kentucky's higher education institutions supports the wisdom of continuing this highly successful program. The ten year anniversary assessment process prompted a

variety of recommendations about how the program might proceed if funding was to be continued.

The following examples constitute alternatives for the recommended continuation of this successful program in order to produce the intended long term economic development outcomes associated with the B4B initiative.

- **Status Quo Continuation** – Continue the B4B program with additional funding as it currently exists with the majority of the funding going to UK and UofL (two thirds/one third split) and a smaller proportional amount of funding to be split among the public baccalaureate institutions (a pro rata split based upon an appropriations formula). Continue with existing guidelines and areas of emphasis.

- **Continue the Program with the Same Institutional Split but Broaden the Guidelines** – Continue the B4B program with additional funding and the same institutional split. Broaden the guidelines to include additional acceptable programs and initiatives that qualify for matched funding.

- **Continue the Program with the Same Institutional Split but Restrict the Guidelines** – Continue the B4B program with additional funding and the same institutional split but restrict the matched state funds solely to research and endowed chairs and professorships.

- **Continue the Program but Modify the Guidelines and Modify the Institutional Split** – Continue the B4B program but modify the guidelines to enable each institution to access the pool of funds in one or more of four ways: 1) endowment matching; 2) research matching; 3) regional stewardship matching; or 4) workforce development matching. Divide the pool of funds according to current institutional share of total public funds in the overall higher education budget including KCTCS.

- **Continue the Program but Modify the Guidelines and Expand the Institutional Split** – Continue the B4B program but modify the guidelines and institutional split to include KCTCS and the Association of Kentucky Independent Colleges and Universities (AIKCU)

- **Create an Entirely New Endowment Match Program** – Utilize the successful strategy of matching state funds to institutional donations but target different academic or research goals.

Summary Cumulative Data Chart

Bucks for Brains Program Indicators of Progress

Combined UK & UofL Data

Indicator	1997	2000	2003	2004	2005	2006
Annual Giving	$87.7	$92.5	$87.6	$97.1	$119.4	$128.6
Endowment Market Value	$447.4	$823.9	$887.5	$1,081.4	$1,184.4	$1,465.4
Endowed Chairs	53	125	164	178	190	199
Endowed Professorships	49	136	201	211	218	256
Federal R&D Expenditures	$75.6	$91.6	$159.9	$184.4	$209.9	$221.7
Extramural R&D Expenditures	$105.2	$147.1	$249.5	$284.4	$309.7	$327.4
Invention Disclosures Received	70	94	92	141	142	157
New Patent Applications Filed	33	50	52	73	86	43
Licenses & Options Executed	6	16	17	15	21	31
Active Licenses & Options	59	67	77	86	116	142
Start-Up Companies Formed	0	6	2	6	7	11

(dollars in millions)

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Kentucky Postsecondary Education Improvement Act of 1997 (HB 1)
National Association of College University Business Officers (NACUBO) Endowment Study
Postsecondary Education in Kentucky: An Assessment 1997
The Regional Economic Impacts of the Bucks for Brains Program (Report by Paul Coomes Ph.D. and Kenneth Troske Ph.D., October 2007)

DRAFT

The Regional Economic Impacts of the Bucks for Brains Program

a report for
The Kentucky Council on Postsecondary Education

by
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October 15, 2007

In this report we provide estimates of some of the economic and fiscal impacts of the so-called *Bucks for Brains* program, with emphasis on the University of Kentucky and the University of Louisville.[1] We focus on the external funding attracted by *Bucks for Brains*-supported scholars at the universities, and investigate the ripple effects of the new money on our regional economies and our tax base. We find that:

1. Over the first decade, UK and UL scholars, sponsored in part by the program, have attracted $442 million in funding from federal and other out-of-state sponsors.
2. The combined external funds attracted by *Bucks for Brains* scholars are associated with $762.5 million in sales to establishments statewide (including the university revenues) over the decade. Total associated statewide employee compensation is $278.8 million. And this employee compensation is associated with $19.5 million in Kentucky income and sales taxes, as well as $3.3 million in local occupational taxes. The external funding is now supporting over 2,100 jobs per year statewide.

[1] The economic benefits of higher education extend beyond simply attracting more money, and include more educated citizens, patents, commercialization of ideas, better job opportunities, and enhanced quality of life. See the study: Siegfried, John J., Allen R. Sanderson, and Peter McHenry, "The Economic Impact of Colleges and Universities," *Economics of Education Review* 26 (2007): 546-558, for a recent criticism of estimates from economic impact studies of spending on higher education. In this current study we try to avoid many of the problems discussed in the Siegfrie et al. study. However, this current study still suffers from the basic problem discussed in Siegfried et al. that economic impact studies of higher education fail to capture the primary benefit of additional spending on higher education—more educated citizens and the benefits they provide for the state.

Background

The *Bucks for Brains* program was authorized in 1997, and state government invested $350 million between fiscal years 1998 and 2007[2]. The primary goal of the program was to stimulate university research, external funding, and economic development in the state. The universities matched the public funding with private contributions, invested the dollars, and used the investment income to endow professorships and provide research support. It is important for readers to understand that the state and matching private contributions have not been spent; rather, they have been invested, and only the return on the investment has been spent to support the research agenda. The contributions are all still there, as part of the universities' foundation assets. The assets are managed under the title Research Challenge Trust Fund (RCTF), the legal name of the *Bucks for Brains* program.

The University of Kentucky and the University of Louisville have pursued somewhat different paths to obtain matching money and in their strategies for deploying the investment proceeds. It is beyond the scope of the present report to analyze the institutional decisions[3]. Generally speaking, it seems clear that UL has targeted its RTCF dollars more towards health-related fields, while UK has used the dollars more widely around the institution, in terms of colleges and departments.

The University of Louisville, relatively new to the funded research mission, used its RCTF funds primarily to recruit new faculty in a few health-related fields. For example, 35 of the current 49 endowed chairholders are in the School of Medicine. Nearly all of the chairs in Medicine are held by faculty who came to the university after the RCTF program was established. These faculty often came with major research grants from the National Institutes for Health (NIH), and most have continued to win NIH funding since. Consequently, the University of Louisville raised its NIH funding from $7.8 million in FY97 to $51.5 million in FY06, perhaps the greatest percentage growth of any university in the United States during the period. Most of the other chairholders are in engineering and business, with one each in nursing, dentistry, education, law, libraries, and the provost's office.

The University of Kentucky, already an established competitor for federal research funds in 1997, used its RCTF funds to attract and retain top scholars and to deepen the research infrastructure on campus. UK used its RCTF funds to recruit top scholars through endowed chaired professorships, to retain top scholars through endowed professorships, as well as for student fellowships and scholarships, and for research infrastructure. UK has posted strong growth in overall external funding, from NIH, but also from the National Science Foundation and many other federal agencies and national sponsors. As

[2] In 1998 Kentucky legislators invested $110 million in general fund appropriations to support Bucks for Brains at the state's research and regional universities. They followed commitment with an additional $120 million in 2000 and another $120 million in 2005. Of the total state funds, $200 million have been allocated to the University of Kentucky, $100 million to the University of Louisville, and $50 million to the state's six comprehensive universities.

[3] See www.research.uky.edu/ca/rctf/index.html for some details about the RCTF program at UK, and http://louisville.edu/bucksforbrains/ for the UL program.

with UL, some of this funding was attracted directly to RCTF-funded chairs, while in other cases the RCTF scholar helped attract the funding as a co-investigator and/or simply as a colleague. In this analysis, we are excluding external funding attracted to UK and UL faculty who are not RCTF funded, but who benefit from collaboration with RCTF-funded scholars. It is beyond the scope of this analysis to fully assign causality for the growth in external funding.

External funding to RCTF-funded Scholars

We have organized data on the amount of external funding attracted by UK and UL scholars that have RCTF funding, by principal investigator and by year. These will be considered the 'direct impacts' in our economic analysis to follow. Raw data on funding by scholar, sponsor, and year was provided by the research administration offices of the two universities. These data are 'awards', i.e., counted the year the grant was awarded, not necessarily the year the dollars were expended. External funds include those from federal government agencies, as well as out-of-state industries, foundations, and other universities. Excluded are grants from Kentucky state and local governments, in-state companies, foundations, and universities[4].

The University of Kentucky had a total of 134 RCTF-funded scholars who have received external funding, totaling $250 million over the FY00 to FY07 period. The University of Louisville had a total of 44 scholars, attracting about $166.6 million over FY98 through FY07. We were not able to obtain data for UK scholars in FY98 and FY99, so we estimated it using growth rates for NIH funding to UK in those years, resulting in external funding estimates of $11.3 million and $13.4 million, respectively. Thus, we have a total of $275.1 million to UK and $166.6 million to UL over the decade considered.

Economic impacts

We use the IMPLAN modeling system to estimate the full economic impacts of the new external funds coming to UK and UL. IMPLAN is a well-established regional input-output modeling system, used by thousands of clients, and whose characteristics have been extensively studied and vetted in the academic literature[5]. We use a version purchased in April, 2007, containing the latest estimates of activity by county in Kentucky and surrounding counties in southern Indiana. In the estimates below we use a state-level version of the model. Alternatively, one could look at the economic impact of UK on the Lexington economy, and the economic impact of UL on the Louisville

[4] Data used here on external funding for the University of Louisville are not yet as accurate as those for the University of Kentucky. We are in the process of subtracting grants from in-state sponsors to RCTF-funded scholars. Entries in the table are estimates based on all funding adjusted using a rough estimate of the external-internal mix.

[5] IMPLAN, like nearly all regional input-output modeling systems, is limited in certain well-understood ways. For example, IO models have a linear, fixed coefficient, production recipe, meaning they implicitly assume a company would buy the same mixture of inputs to produce $1 million, $10 million, or $100 million of output. Similarly, wage rates are assumed to be constant, and labor can be purchased in fixed ratios as needed for any production level. Moreover, for less populated areas there is little publicly available data on industry activity and IMPLAN 'estimates' activity based on proxy data and assumed relationships. There is a vast academic literature on these and other limitations. The tool is considered fairly reliable for relatively small perturbations around current levels of activity, but unrealistic for very large changes to the economy.

economy[6]. Effectively this means we are simulating the combined impact of external dollars to UK and UL on vendor and retail purchases throughout the state, ignoring the fact that the two universities are seventy miles apart and operate in two different markets.

We estimate the ripple effects by simulating an increase in new revenues to the input-output sector denoted Colleges and Universities, one of 500 industries detailed in our modeling system. The system does not explicitly distinguish between new revenues from federal research grants, tuition, gifts, etc. So, we are implicitly assuming that the new dollars hitting the university from research grants get spent on average like other dollars received by the university[7].

Estimated Economic and Fiscal Impacts of External Funds Attracted by *Bucks for Brains* Scholars

fiscal years	1998	1999	2000	2001	2002
External dollars attracted					
University of Kentucky	$11,263,867	$13,371,312	$18,126,426	$27,332,956	$33,694,231
University of Louisville	$459,750	$1,823,395	$3,282,150	$14,018,037	$17,771,984
Total	$11,723,617	$15,194,707	$21,408,576	$41,350,993	$51,466,215
Total economic impacts statewide, including universities					
Total output of establishments	$20,238,172	$26,230,224	$36,957,063	$71,383,133	$88,844,775
Total jobs	338.5	438.8	618.2	1,194.1	1,486.2
Total employee compensation	$7,399,789	$9,590,693	$13,512,804	$26,100,187	$32,484,779
Fiscal impacts					
Kentucky state income and sales tax revenues	$517,985	$671,349	$945,896	$1,827,013	$2,273,934
Local occupational tax revenues, Fayette and Jefferson counties	$93,524	$119,375	$167,125	$311,299	$386,961
Total state and local payroll-based taxes	$611,509	$790,723	$1,113,021	$2,138,312	$2,660,896

Estimated Economic and Fiscal Impacts of External Funds Attracted by *Bucks for Brains* Scholars

fiscal years	2003	2004	2005	2006	2007	Cumulative
External dollars attracted						
University of Kentucky	$23,727,916	$32,945,098	$36,395,747	$39,234,494	$38,994,348	$275,086,395
University of Louisville	$16,540,135	$24,285,768	$25,133,523	$28,330,814	$34,983,890	$166,629,446
Total	$40,268,051	$57,230,866	$61,529,270	$67,565,308	$73,978,238	$441,715,841
Total economic impacts statewide, including universities						
Total output of establishments	$69,513,678	$98,796,141	$106,216,363	$116,636,216	$127,706,690	$762,522,455
Total jobs	1,162.8	1,652.6	1,776.7	1,951.0	2,136.2	
Total employee compensation	$25,416,649	$36,123,348	$38,836,443	$42,646,308	$46,694,063	$278,805,062
Fiscal impacts						
Kentucky state income and sales tax revenues	$1,779,165	$2,528,634	$2,718,551	$2,985,242	$3,268,584	$19,516,354
Local occupational tax revenues, Fayette and Jefferson counties	$298,817	$423,527	$456,799	$500,515	$542,082	$3,300,024
Total state and local payroll-based taxes	$2,077,982	$2,952,161	$3,175,350	$3,485,757	$3,810,666	$22,816,379

Most readers will focus on the total cumulative impacts, that is, the estimates in the bottom right hand corner of the table. We estimate that the combined external funds

[6]We actually did the calculations both ways, and there was little difference in the total state impact, so to keep things simple we just report the estimates using the state-level model.

[7] With some accounting research at the institutions we could modify the model to more accurately reflect actual spending profiles related to research dollars, to the extent they differ from average university spending profiles.

attracted by *Bucks for Brains* scholars are associated with $762.5 million in sales to establishments statewide (including the university revenues) over the decade. Total associated statewide employee compensation is $278.8 million. The external funding is now responsible for over 2,100 jobs statewide. The employee compensation is associated with $19.5 million in Kentucky income and sales taxes, as well as $3.3 million in local occupational taxes.

We estimated the tax revenues using effective tax rates. An effective tax rate is calculated as total tax collections divided by total compensation for the relevant jurisdiction. For example, Kentucky state government collected an average of $2.8 billion in individual income tax receipts during fiscal years 2001 to 2005, while employee compensation in the state averaged $74.5 billion. The ratio, 3.78 percent, is a good way to predict state income tax receipts from new employee compensation in the state. A similar calculation was made for state sales and use taxes.

Local occupational taxes are also an important consideration. Jefferson County levies a city-county tax of 1.4 percent on all wages earned in the county, and the public school system levies a tax of 0.75 percent on all wages of residents working in the county. Fayette County levies a tax of 2.5 percent on all wages earned in the county, and the public school system levies a tax of 0.50 percent on all wages of residents working in the county. We divided the historical collections data from these jurisdictions by the employee compensation in the respective metropolitan areas to obtain an effective local occupational tax rate.

Caveat. Note that these estimates of fiscal impacts are not adjusted for any other public funds used to support the RCTF scholars. Not only did the state government invest $300 million directly into the endowments of the University of Kentucky and the University of Louisville, it also made a number of large investments in research buildings and facilities. It is beyond the scope of this report to net all these public funds out and derive a clean return on public investment ratio.

Council on Postsecondary Education
October 17, 2007

UK Renovation of Thomas Hunt Morgan Biological Sciences Building

The following interim project recommendation will authorize the University of Kentucky to use the current HB 380 authorization to upgrade fume hoods in the Thomas Hunt Morgan facility and also to complete limited renovations to upgrade teaching and research labs with university funds.

ACTION: The staff recommends that the Council approve the request of the University of Kentucky to use the HB 380 authorization to upgrade fume hoods in the Thomas Hunt Morgan Biological Sciences Building and also to complete limited renovations to upgrade teaching and research labs. The estimated project cost is $3.2 million.

The University of Kentucky proposes to use the current authorization to upgrade fume hoods in the Thomas Hunt Morgan Biological Sciences Building ($3,188,000) and also to renovate teaching and research labs. The project is authorized by HB 380, the source of funds is institutional, the primary project intent remains unchanged, and the projects will be completed simultaneously. Approximately 60 percent of the authority will be expended to complete fume hood and life safety upgrades and 40 percent to renovate teaching and research labs. The University of Kentucky's Board of Trustees approved the project at its September 11, 2007, meeting.

The Council has the statutory responsibility to review and approve postsecondary education capital projects costing $600,000 or more, regardless of fund source, that have been approved by an institution's governing board. During the interim, capital projects are evaluated under the requirements established by KRS 45.760(14)(17) and KRS 45.763. Since the estimated cost of this project exceeds the $600,000 threshold, the Council and the Capital Projects and Bond Oversight Committee must approve the project before it is initiated. During the interim, capital projects are evaluated under the requirements established by KRS 45.760(14) and KRS 45.763.

This project will upgrade the fume hood exhaust and air supply systems within the Thomas Hunt Morgan Biological Sciences Building, create six new offices, and renovate and upgrade, as necessary, teaching and research labs to accommodate eight new biology faculty. The

project is scheduled to be completed by October 2008. The project requires interim authorization to allow the expanded work.

The project meets the requirement set forth by KRS 45.760 (17)(b) that the requested configuration is required to meet the need of specific programs to be accommodated within the Thomas Hunt Morgan Biological Sciences Building. The University of Kentucky's Capital Project Management Division will implement the project, and no additional operations and maintenance funds are required.

Following Council approval, the staff will forward the Council's recommendation to the secretary of the Finance and Administration Cabinet and to the Capital Projects and Bond Oversight Committee.

Staff preparation by Sherron Jackson