



# **Providing Accountability Through Data and Process – The Program Audit**



**Choice/Chance: Driving Change in Higher  
Education**

**AIR Annual Forum  
Kansas City, Missouri**

**June 5, 2007**

**12:30 pm – 2:10 pm**

Robert Mullen, Associate Director, Institutional Research and Planning, UM–System  
Cuba Plain, Assistant Vice President, Budget Planning and Development, UM-System  
Tara Warne, Associate Research Analyst, UM-System  
Lawrence Westermeyer, Director of Institutional Research, UM–St. Louis



# Session Overview



- Introduction of Panelists
- Background and Concepts
- Panelist Perspectives
- Methodology and Example
- Uses and Limitations
- Questions and Answers



# What is the Program Audit?



- A Process
- Potential Outcomes for Program or Academic Unit: modified, consolidated, suspended, or discontinued.
- Decision Maker - the Chancellor or designee



# What the Program Audit Process is Not



- Not Part of the Missouri CBHE's Five-Year Program Review
- Not Part of the University of Missouri's Program Review Process
- Not a System Office "Hit-list"



# Development Process – System Perspective



- Which Academic Units are potential candidates for an Audit?
- First Step – Collaboratively Building a Departmental Profile for each Academic Unit
- Compile Supplemental Data –
- Overall Purpose: Painting a Picture



# Development Process – System Perspective



- Identified Measures of Success
- Identified Data Sources
- Assess Applicability to the Goals
- System and Campus IR Iterations
- Collaborations
- No Hidden Data or Agenda's



# Development Process – Campus Perspective



- Collaborative and Iterative
- System IR Produced Draft
- Campus IR Reviewed/Suggested Changes
- Campus Administrator Review



# Development Process – Campus Perspective (cont.)



- Original Data Consisted of “Bookends”
- Provided Additional Data to Fill in the Gaps
- Additional Campus Data





# The Program Audit Process



- Program Audit Procedures
- Role of Campus Standing Committees



# The Program Audit Process

(cont.)



- Units Report Addressed:
  - Quality
  - Outcomes
  - Demand
  - Relation to Campus Mission
  - Comparative Advantages
  - Adequacy of Resources



# The Program Audit Process

(cont.)



- Committee Makes Recommendations to Chancellor
- Chancellor Makes Final Decision
- Chancellor Reports Activities to VP for Academic Affairs
- VP for Academic Affairs Submits Report to President



# Building the Profile Cost Data



Department Profile Sample  
August, 2006  
Campus: *Campus Name*  
School/College: COLLEGE OF ARTS & SCIENCES  
Department: *Department Name*

## Departmental Cost Data based on School/College Cost Study (FY2004)

Tier 1 - Direct and Allocated Primary Program Costs less Total Income (T1 Subsidy)	\$610,441
Tier 2 - Tier 1 plus Allocated Student Aid & Support Costs less Total Income (T2 Subsidy)	\$1,055,060
Tier 3 - Tier 2 plus Campus Support Costs less Total Income (T3 Subsidy)	\$1,677,186
Tier 4 - Tier 3 plus System Overhead & Depreciation less Total Income (T4 Subsidy)	\$1,823,093
School/College Full Cost of Instruction per SCH	\$402

Departmental Data Based on Delaware Costs & Productivity (FY2004):			
Direct Instructional Costs per SCH:	\$395	Total:	\$2,096,579
Costs Less Gross Student Fees per SCH:	\$125	Total:	\$664,186
Percent of Direct Instructional Costs Covered by Gross Fees:	66%		
Compared to National Data By Discipline (FY2004)			
Departmental Average Cost per SCH:	Unit \$395	National (Median) \$239	Percent of National 165%
School/College Average Cost per SCH:	\$185		
Fall SCH per Total Faculty FTE:	112	237	47%
Research/Service per Ranked Regular Faculty FTE:	\$65,930	\$201,594	32%

### Departmental Information:

FY2006 Full-Time Ranked Regular Faculty: 15  
Percent Tenured: 73%

	SCH						Degrees						Majors						
	FY01	FY02	FY03	FY04	FY05	5-YR	FY01	FY02	FY03	FY04	FY05	5-YR	FS00	FS01	FS02	FS03	FS04	5-YR	
Department Total	5,107	5,109	5,495	5,607	5,792	13%	30	36	39	20	31	3*	160	138	141	128	159	( 1*)	
Percent Service	70%	71%	72%	75%	73%														
Program	Degree																		
Program Name																			
				BACHELOR OF ARTS			4	9	13	4	7	75%	27	26	31	24	25	( 7*)	
				BACHELOR OF SCIENCE			11	10	10	5	6	( 45*)	59	60	60	53	85	23*	
				MASTER OF SCIENCE			11	9	11	6	14	27%	26	16	18	23	18	( 31*)	
				DOCTOR OF PHILOSOPHY			4	8	5	5	4	0%	38	29	32	28	31	( 18*)	
				MINOR			-	-	-	-	-	-	-	5	-	-	-	-	



# Building the Profile Delaware Data



Department Profile Sample  
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Departmental Cost Data based on School/College Cost Study (FY2004)  
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Tier 2 - Tier 1 plus Allocated Student Aid & Support Costs less Total Income (T2 Subsidy) \$1,053,060  
Tier 3 - Tier 2 plus Campus Support Costs less Total Income (T3 Subsidy) \$1,877,166  
Tier 4 - Tier 3 plus System Overhead & Depreciation less Total Income (T4 Subsidy) \$1,823,093  
School/College Full Cost of Instruction per SCH \$402

## Departmental Data Based on Delaware Costs & Productivity (FY2004):

Direct Instructional Costs per SCH:	\$395	Total:	\$2,098,579
Costs Less Gross Student Fees per SCH:	\$125	Total:	\$664,186
Percent of Direct Instructional Costs Covered by Gross Fees:	58%		

## Compared to National Data By Discipline (FY2004)

	Unit	National (Median)	Percent of National
Departmental Average Cost per SCH:	\$395	\$239	165%
School/College Average Cost per SCH:	\$185		
Fall SCH per Total Faculty FTE:	112	237	47%
Research/Service per Ranked Regular Faculty FTE:	\$65,330	\$201,594	32%

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Percent Service	70%	71%	72%	75%	73%														
Program	Degree																		
Program Name	BACHELOR OF ARTS																		
							4	9	13	4	7	75%	27	26	31	24	25	( 7% )	
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							11	10	10	5	6	( 45% )	59	60	60	53	85	23%	
	MASTER OF SCIENCE																		
							11	9	11	6	14	27%	26	18	18	23	18	( 31% )	
	DOCTOR OF PHILOSOPHY																		
							4	8	5	5	4	0%	38	29	32	28	31	( 18% )	
	MINOR																		
							-	-	-	-	-	-	-	5	-	-	-	-	



# Building the Profile Standard Profile



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Tier 4 - Tier 3 plus System Overhead & Depreciation less Total Income (T4 Subsidy) \$1,823,093  
School/College Full Cost of Instruction per SCH \$402

Departmental Data Based on Delaware Costs & Productivity (FY2004):  
Direct Instructional Costs per SCH: \$395 Total: \$2,098,579  
Costs Less Gross Student Fees per SCH: \$125 Total: \$664,166  
Percent of Direct Instructional Costs Covered by Gross Fees: 68%

Compared to National Data By Discipline (FY2004)  
Departmental Average Cost per SCH: \$395 National (Median) \$239 Percent of National 165%  
School/College Average Cost per SCH: \$185  
Fall SCH per Total Faculty FTE: 112 237 47%  
Research/Service per Ranked Regular Faculty FTE: \$63,330 \$201,594 32%

## Departmental Information:

FY2006 Full-Time Ranked Regular Faculty: 15  
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	SCH						Degrees						Majors					
	FY01	FY02	FY03	FY04	FY05	5-YR	FY01	FY02	FY03	FY04	FY05	5-YR	FS00	FS01	FS02	FS03	FS04	5-YR
Department Total	5,107	5,109	5,495	5,607	5,792	13*	30	36	39	20	31	3*	160	138	141	128	159	( 1*)
Percent Service	70*	71*	72*	75*	73*													
Program	Degree																	
Program Name	BACHELOR OF ARTS						4	9	13	4	7	75*	27	26	31	24	25	( 7*)
	BACHELOR OF SCIENCE						11	10	10	5	6	( 45*)	69	60	60	53	65	23*
	MASTER OF SCIENCE						11	9	11	6	14	27*	26	18	18	23	18	( 31*)
	DOCTOR OF PHILOSOPHY						4	8	5	5	4	0*	38	29	32	28	31	( 18*)
	MINOR						.	.	.	.	.	.	.	5	.	.	.	.



# Building the Profile: Cost Data



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Percent Service	70%	71%	72%	75%	73%														

## Program

## Degree

Program Name	BACHELOR OF ARTS	BACHELOR OF SCIENCE	MASTER OF SCIENCE	DOCTOR OF PHILOSOPHY	MINOR
	4	9	13	4	7
	75%	27%	45%	0%	
	27	26	31	24	25
	11	10	10	5	6
	11	9	11	6	14
	4	8	5	5	4
	.	.	.	.	.
	27	26	31	24	25
	69	60	60	53	85
	26	18	18	23	18
	38	29	32	28	31
	.	5	.	.	.



# Cost Study



- **Purpose:** Determine for each cost center
  - Historical Full Cost of the unit
  - Full cost of instruction and research/public service of the unit
  - Unit's average cost per credit hour
  - Unit's average cost per credit hour by student level
  - Income attributable to the unit
  - Student aid attributable to the unit





# Cost Study



- **Scope**
  - Operations and Continuing Education Funds
- **Goal**
  - To appropriately match costs and revenues
  - To appropriately match credit hours produced with the costs of producing those credit hours
  - Additional Details can be found on Page 4 of the Handouts



# Cost Study



- **General Methodology**
  - Designate specific cost centers
  - Identify consistent categories of cost
  - Use tier costing methods to further categorize and allocate costs
  - Development of unit costs



# Cost Study - Allocation of Costs to Cost Centers



1. Direct expenditures of the cost center are allocated to the cost center. This includes both primary program costs and support costs paid by the cost center.



# Cost Study - Allocation of Costs to Cost Centers



2. Allocate Primary Program Costs not budgeted in a cost center
  - Specifically identified with cost center
  - Remaining on-campus instruction allocated based on relative credit hours produced
  - Remaining research allocated based on relative research expenditures by cost centers
  - Community education and community service expenses (PCS 1.3 & 3.2) allocated to a community service cost center



# Cost Study - Allocation of Costs to Cost Centers



## 3. Allocate Scholarship/Fellowship Expenses

- Student aid expenses directly identified with a cost center allocated to that cost center
- All other student aid expenses are allocated to the cost centers based on student credit hours generated, by student level and residency



# Cost Study - Allocation of Costs to Cost Centers



4. Allocate System Overhead & Depreciation
  - System administration and university-wide overhead expenditures and depreciation are allocated to the campus cost centers, campus overhead units, and UM Extension based on direct and allocated primary program expenditures and student aid.



# Cost Study - Allocation of Costs to Cost Centers



## 5. Allocate Campus Depreciation

- Campus depreciation is allocated to the cost centers and campus overhead units based on assignable square footage of physical plant space.



# Cost Study - Allocation of Costs to Cost Centers



## 6. Allocate Operation & Maintenance of Physical Plant

- Operation & maintenance of physical plant is allocated to the cost centers and campus overhead units based on assignable square footage of physical plant space.





# Cost Study - Allocation of Costs to Cost Centers



## 7. Allocate Institutional Support, Student Services, and Academic Support

- Institutional support costs are allocated based on direct and allocated primary program expenses plus direct support expenses for academic support and student services.



# Cost Study - Allocation of Costs to Cost Centers



- Student service support costs are allocated on the basis of headcount student majors.
- Academic administration costs are allocated on relative primary program expenditures.
- Library expenditures are allocated on the basis of headcount majors and teaching and research faculty.
- All other academic support expenses are allocated on the basis of headcount majors.



# Cost Study



- **Allocation of Full Costs Between Primary Programs**
  - Full cost of instruction
  - Full cost of research and public service

See Page 5 of the Handouts for additional detail



# Cost Study



- **Unit Cost Calculations**
  - Instructional cost per credit hour produced by academic cost center
  - Weighted costs developed to determine relative cost by student level
    - Weights of 1.0, 3.0, 4.5, & 7.0 were used for undergraduate, masters, professional and doctoral



# Cost Study



- **Income Calculations**

- Tuition is calculated based on the student credit hours produced by academic cost center by student level and residency
- Instructional computing fees allocated on proportional student credit hours produced
- All other fees and other income that is identifiable with an academic unit is allocated to the unit
- Gross income is reduced by student aid to determine net income by academic unit



# Department Profiles Tier Costs



- **Tier 1** – Direct and Allocated Primary Program Costs less Total Income Generated
- **Tier 2** – Direct and Allocated Primary Program Costs plus Allocated Student Aid, Building Maintenance, and 10% of Allocated Academic Support and Student Services less Total Income
- **Tier 3** - Full Cost of Instruction Excluding Depreciation and System Overhead less Total Income
- **Tier 4** – Full Cost of Instruction less Total Income



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	MINOR						.	.	.	.	.	.	.	5	.	.	.	.	



# Delaware Study

National Study of Instructional Costs and Productivity



- The Delaware Study Responds to Public Perceptions about Faculty Productivity
- Establishes Productivity and Cost Benchmarks
- Costs driven by disciplinary mix





# Delaware Study

National Study of Instructional Costs and Productivity



- Data Collected by CIP-4
- Participation is Voluntary: nearly 200 Institutions with Varying Missions in 2005
  - UM compares only to other research institutions (68)
- Only Includes Direct Instructional Costs



# Delaware Study

National Study of Instructional Costs and Productivity



## Caveats

- Time lag
- Must be able to Link Students to Faculty to Dollars
- Lose Interdepartmental Productivity and Instructional Costs Attributed to Administrative Units



# Instructional Productivity Defined



- Measures of SCH and Sections
- FTE Faculty by Type
- FTE Students, Majors, and Degrees
- Each have National Norms as Benchmarks



# Costs Defined



- Include only Direct Instructional Costs—a Subset of Tier 1 Costs from the Cost Study
- Expenditures per SCH and per FTE Student
- Expenditures for Instruction, Research, and Service



# Delaware and the Department Profiles



- Department Profiles Combine Data from Three Areas:
  - School and College Cost Study
  - Delaware Costs and Productivity
  - Departmental Information



# Building the Profile: Putting it Together



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DOCTOR OF PHILOSOPHY	4	8	5	5	4	0%	38	29	32	28	31	( 18%)							
MINOR	.	.	.	.	.	.	.	5	.	.	.	.							



# Building the Profile: Putting it Together



- Majors and Degree Data Pulled from Census Files
- Percent of SCH as Service Hours
- SCH Differs from NSICP: who owns not who teaches a given course



# Uses and Limitations – System Perspective



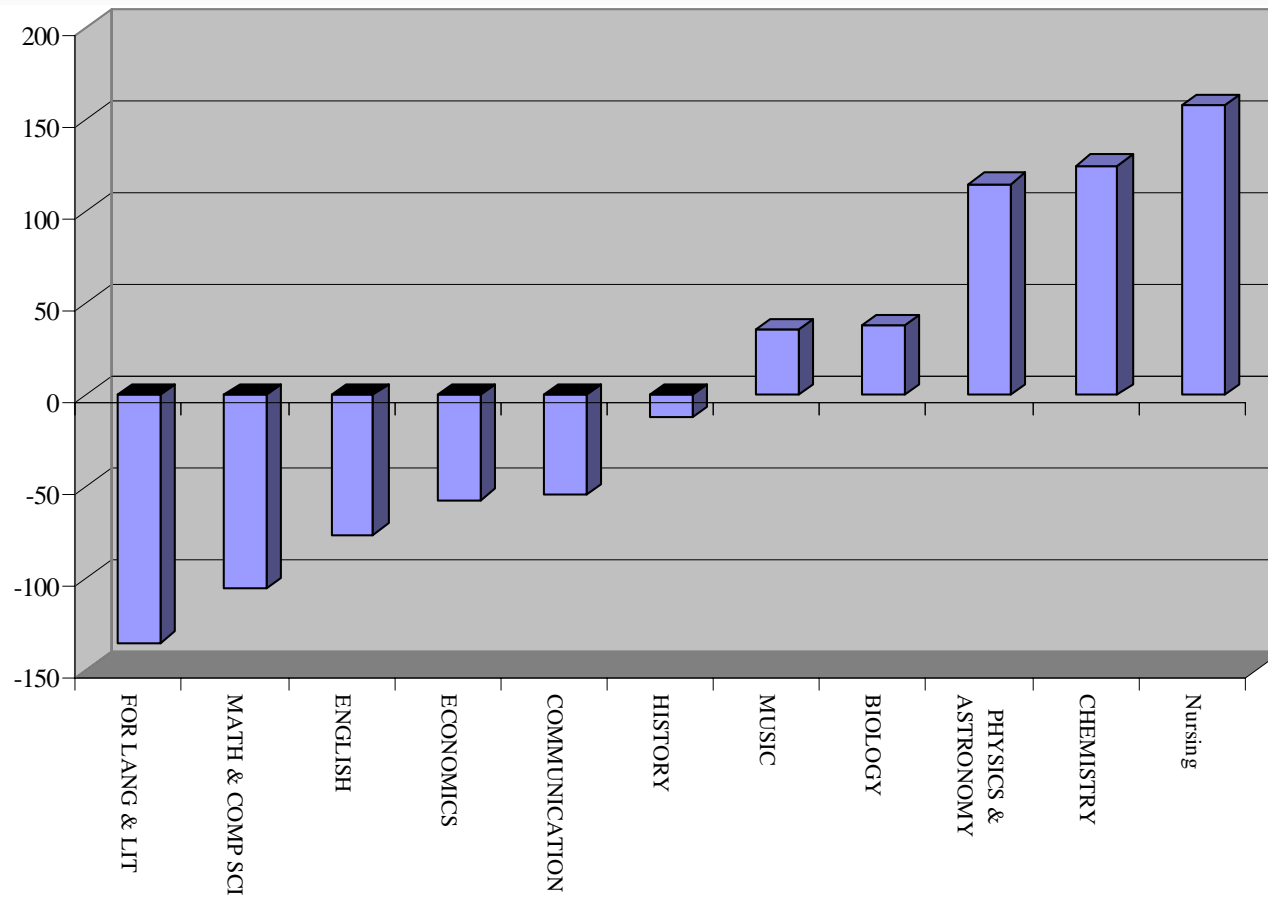
- Department versus Program
- The Chainsaw versus the Scalpel
- Interdisciplinary/Interdepartmental Work
- Statewide Programs
- Timely Data? Using FY2004 Data
- Data Acceptance – Painting the Picture





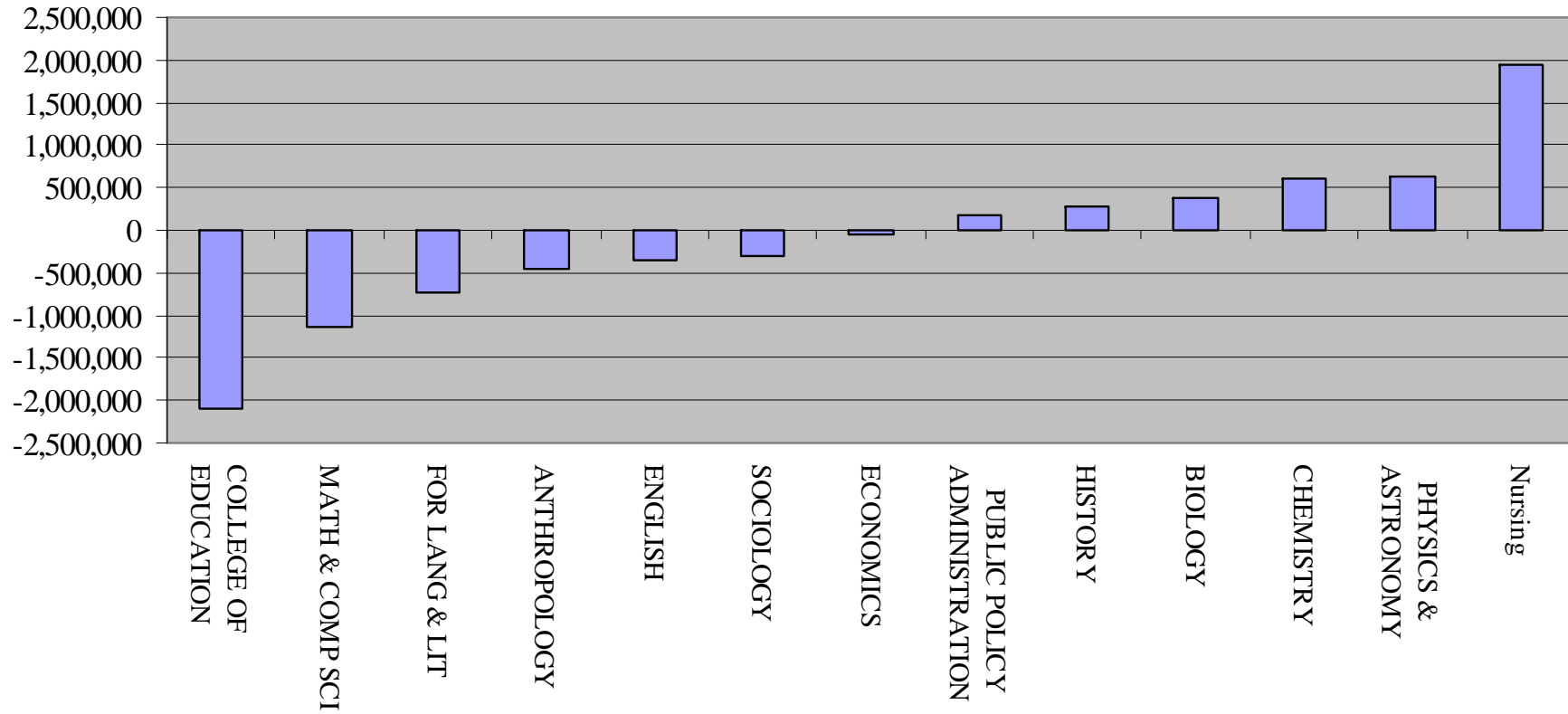


# T1 Subsidy per SCH



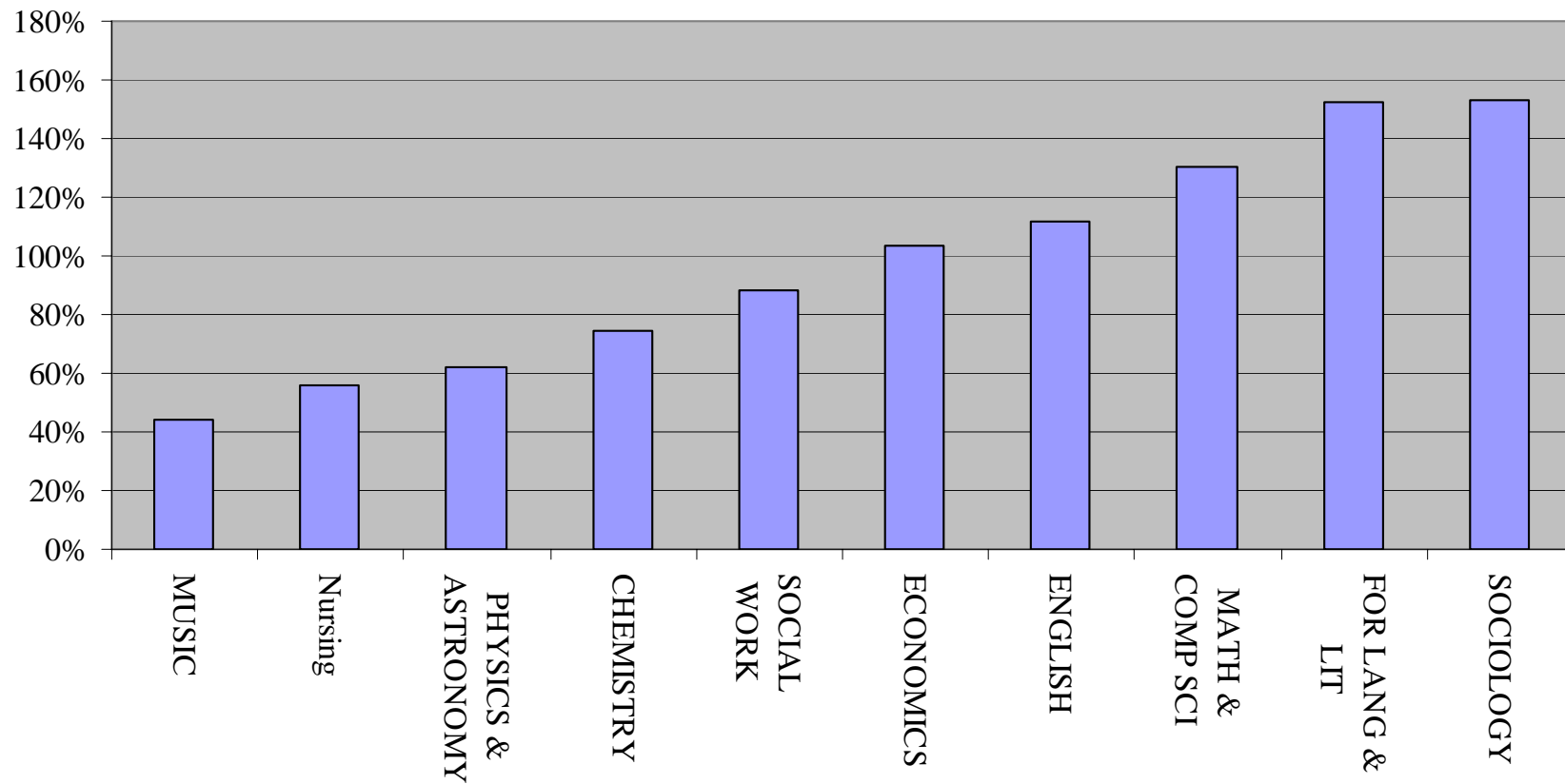


# T1 Subsidy



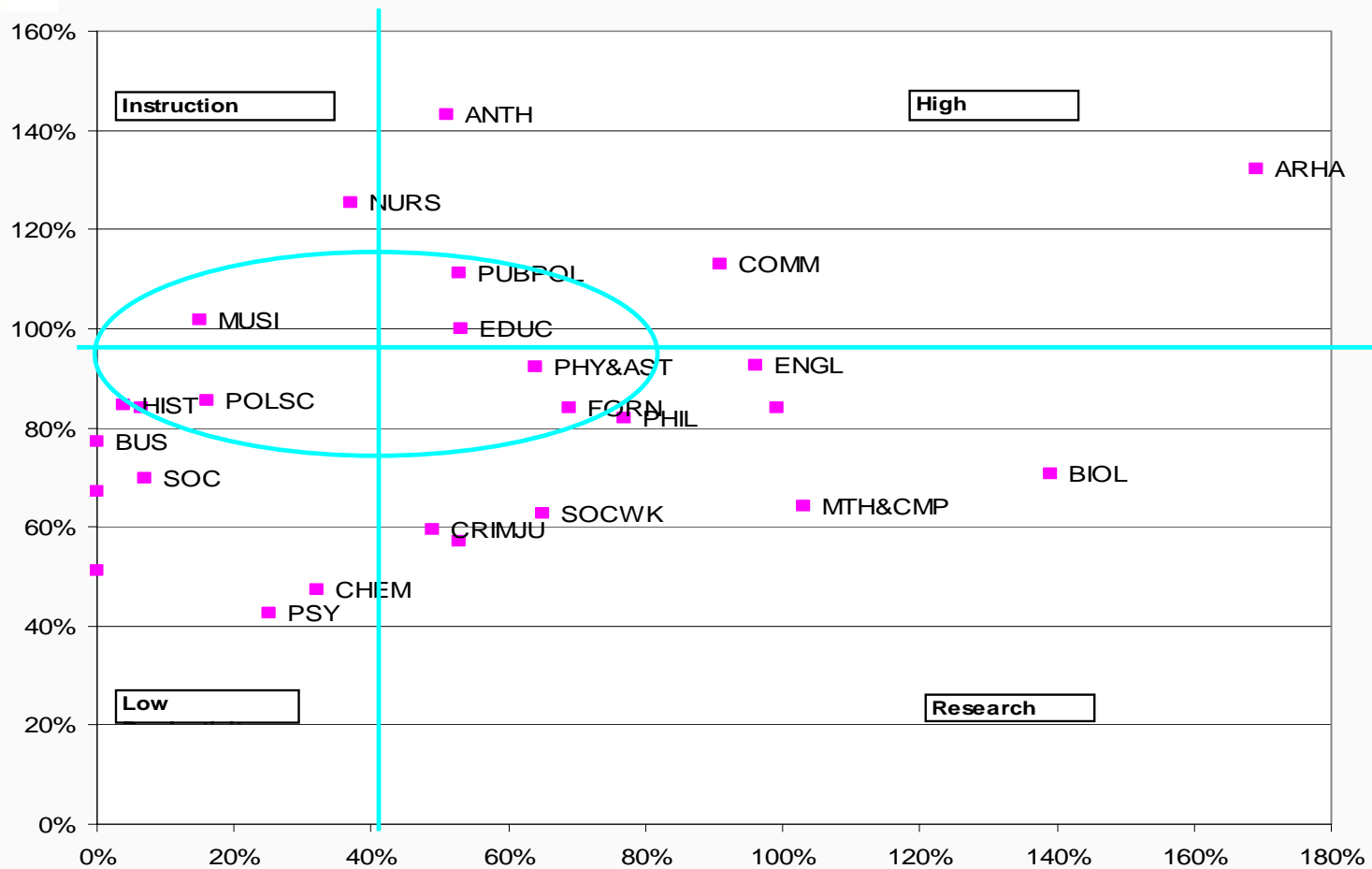


# T1 Percent Recouped





# Relative Productivity Graph





# Uses and Limitations – Campus Perspective



- VPAA and Provost Review Goals and Data
- Provost Identifies Units
- Committee of Faculty Conducts Audits
- Stressful and Emotional Learning Process



# Audit Activities



- FY2004 – Five Programs, One Department
- FY2005 – Colleges of Education
- FY2006 – None Conducted



# FY2004 Recommendations and Results



- Four Programs Continued
  - Restore Faculty, Enhance External Funding
  - Broaden Program
  - Rename Two Programs to Broaden Appeal, Secure Additional External Funding
- One Program Placed on Probation
- Department to Explore Cooperative Program Locally



# Questions and Further Discussions



Additional Information:

Delaware Study - <http://www.udel.edu/IR/cost/>

Program Audits -

<http://www.umssystem.edu/ums/departments/gc/rules/administration/20/035.shtml>

Cost Study - <http://www.umssystem.edu/ums/departments/fa/budget/>

UMSL IR Office - <http://www.umsl.edu/%7Eir/>

UMSa IR Office - <http://www.umssystem.edu/ums/departments/fa/planning/>





# Contact Information



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Thank You for Your Time