

A Report on Research Activities at Research Universities

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ABSTRACT

Results of a survey of senior research administrators at Carnegie Doctoral/Research Universities - Intensive and -Extensive are presented. The survey results are discussed. Survey topics included the importance of research to the institution's mission, research planning and priority-setting, research culture, research publicity, economic development and technology transfer, and a request to the survey respondents to identify important positive and negative trends in research administration.

INTRODUCTION

Systems for understanding, managing, and improving research activities and research administration at U.S. universities are the subject of a number of research administration publications (Kirby, 1996; Opel, 1993; Valentine, 1992). In at least one previous case, survey research was used in one of these studies (McCallister, 1993). Rather than propose a new system or review systems, we decided to conduct a survey of senior university research administrators on a broadly defined set of their institution's current research activities. In spring 2005, the senior research administrator at each of the 250 Carnegie classified doctoral/research universities - Extensive and -Intensive was identified (Shulman, 2001). They were contacted by email and asked to answer an on-line survey. The purpose of the survey was to gain a better understanding of national trends in research planning and priorities, research culture, research publicity, economic development, and technology transfer. Ninety-five senior research administrators

completed the survey, for a response rate of 38%. Responses came from 35 states. Two-thirds of the respondents were from Doctoral/Research Universities -Extensive and one-third were from Doctoral/Research Universities -Intensive. Two-thirds represented universities with undergraduate enrollments over 10,000; 72% were public and 28% were private institutions.

Survey topics included:

- The Importance of Research to an Institution's Mission
- Research Planning and Priority Setting
- Research Culture
- Research Publicity
- Economic Development and Technology Transfer
- Important Trends

These survey topics and results are presented and discussed below. The survey was intended to stimulate thought, not necessarily to recommend specific actions, and to provide insights into the management of research at U.S. universities.

PRESENTATION AND DISCUSSION OF SURVEY RESULTS

The Importance of Research to an Institution's Mission

In general, research was deemed of equal importance as academics to the mission of an institution. Seventy percent of respondents believed the research role is as important to their University's mission as the academic role (Table 1).

Table 1. Importance of Research to the Institution

How important is research to the mission of your institution?

The most important role of the institution	12%
Equally as important as the academic role, but not more important	70%
Important, but less important than the academic role	18%
Quite a bit less than the academic role	0%

Research Planning and Priority Setting

The majority of respondents believed that their institutions establish overall priorities as part of their planning, with 65% agreeing completely and 31% agreeing somewhat. They are less likely to agree that *research* priorities are established as part of the overall academic planning of their institution, with only 35% agreeing completely and 49% agreeing somewhat. The majority of respondents did not believe that research priorities are always reviewed on a regular basis or that infrastructure costs to support research are always planned based on priorities. They also did not agree completely that institutional research priorities are broadly known among faculty (Table 2).

Table 2. Importance of Research Planning and Priority Setting to the Institution

How much do you agree or disagree:	Agree Completely	Agree Somewhat	Disagree Somewhat	Disagree Completely
Overall institutional priorities are established as part of the overall planning of our institution.	65%	31%	3%	1%
Overall research priorities are established as part of the overall academic planning of our institution.	35%	49%	15%	1%
Research priorities are reviewed on a regular basis.	29%	45%	21%	5%
Infrastructure costs (start-up, equipment, renovation/building, etc.) to support research are planned based on priorities.	21%	61%	14%	4%
Research priorities are not formal and research projects are based primarily on individual efforts.	16%	36%	37%	12%
Institutional research priorities are broadly known among faculty.	12%	49%	35%	4%
Infrastructure costs to support research are considered primarily when grants are being submitted.	8%	39%	42%	11%

The majority, but not all, research administrators believe that having overall institutional research priorities are “very” important (Table 3).

Table 3. Importance of Overall Institutional Research Priorities

How important is it to have overall institutional research priorities?

Very	64%
Somewhat	26%
Slightly	3%
Not at all	6%

When research priorities are established, generally the senior research administrator, chief academic officer, and president/chancellor are involved. Faculty committees, senior administrative officers, and individual faculty are involved in setting research priorities at about half of the institutions (Table 4).

Table 4. Groups Involved in Setting Research Priorities

If research priorities are established, who is involved?

Senior Research Administrator	86%
Chief Academic Officer	78%
President/Chancellor	72%
A Faculty committee	58%
Senior administrative officers	52%
Individual faculty	43%
Other	7%

Research Culture

At 35% of these institutions, the research mission is known and embraced “very well” among faculty and staff. It is known and embraced by faculty and staff “somewhat” among 58% of these institutions (Table 5).

Table 5. Knowledge of and Embracing of Research Mission

How well is the research mission known and embraced among faculty and staff?

Very	35%
Somewhat	58%
Slightly	7%
Not at all	0%

Different activities are used to stimulate a strong research culture at these universities. The most common method is to provide publicity in campus publications and on the web. External publicity, beyond the campus, and internal competitions for PI seed funding are the next most common methods, followed by awards/recognition and financial incentives. Guaranteed sabbaticals, other forms of competitive internal funds, bridge funds, or leave programs are less common ways of stimulating a strong research culture (Table 6).

Table 6. Use of Awards and Incentives to Stimulate Research Culture

How much, if any, are the following used to stimulate a strong research culture?	Very	Some- what	Slightly	Not at all	Very + Some
Publicity in campus publications or the web	59%	34%	7%	0%	93%
Publicity beyond your campus	42%	45%	11%	2%	87%
Internal competitive seed funds for PIs	41%	41%	12%	6%	82%
Awards or other forms of appreciation (dinners, receptions, etc.)	26%	46%	26%	2%	72%
Financial incentives	25%	55%	14%	6%	80%
A guaranteed sabbatical program	22%	26%	19%	33%	48%
Internal competitive seed funds for centers	16%	37%	28%	19%	53%
Internal competitive travel funds	14%	37%	28%	22%	51%
Bridge funds for previously externally funded but declined PIs	13%	35%	35%	18%	47%
Other	9%	0%	0%	0%	9%
Internal competitive symposium funds	6%	26%	35%	33%	32%
A competitive leave program	5%	22%	35%	38%	27%
Increased frequency of leave eligibility tied to external support obtained for research	1%	19%	23%	56%	20%

Incentives, awards, or other forms of recognition are used to varying degrees, and research administrators are split on their relative importance: 50% believe they are very important; 37% believe they are somewhat important; and 13% believe they are only slightly or not at all important (Table 7).

Table 7. Importance of Awards and Incentives to Research Mission

How important, if at all, are incentives, awards or other forms of recognition to the research mission?

Very	50%
Somewhat	37%
Slightly	10%
Not at all	3%

Research Publicity

About three-quarters of institutions regularly publicize faculty research activities, funding, and results. Virtually all institutions have some formal schedule for publicizing research (Table 8).

Table 8. Institutional Publicity about Research Activities, Results, and Funding

How often does your institution publicize research activities and results, and research funding?		
	Research Activities/Results	Research Funding
Ongoing basis through a variety of means	74%	71%
Periodically, but not more than quarterly	15%	13%
Occasionally; not more than twice a year	8%	13%
We have no formal schedule	3%	2%

The most common forms of publicity, used by 9 out of 10 institutions, are press releases to the general media and institutional publications, such as alumni magazines. Over half use press releases to higher education media, a research magazine, and an annual research report to publicize research activities and results. Research-extensive institutions are a little more likely than research-intensive institutions to use research magazines (64% vs. 47%). (See Table 9.)

Table 9. Methods used to Publicize Research Activities, Results, and Funding

Which methods do you use to publicize research activities, results, and research funding?

	Research Activities/Results	Research Funding
Press releases to the general media	87%	60%
In general institution publications (such as an alumni magazine)	87%	63%
Press releases to higher education media	59%	39%
A research magazine	58%	40%
An annual research report	54%	64%
Special research summaries	47%	41%
Individual letters from the president or senior academic officer	28%	26%

Economic Development and Technology Transfer

Among these institutions, 50% play a large role in economic development, while 41% play a slight role. Larger universities (more than 10,000 undergraduates) and research-extensive universities are a little more likely to play a large role than are institutions with fewer than 10,000 undergraduates or research-intensive institutions (60% versus 50%). (See Table 10.)

Table 10. Role Played by Institution in Economic Development

What role, if any, does your institution play in economic development?

Large role	56%
Slight role	41%
At most a minor role	0%
No role	2%

The large majority of these institutions have an Office of Government Relations (85%) and a Technology Transfer Office (84%). Virtually all have patent and copyright policies that share proceeds between the university and the inventor (Table 11).

Table 11. Technology Transfer Mechanisms at Universities
Does your university have:

Patent and copyright policies which share proceeds between the University and the inventor	93%
An Office of Government Relations	85%
A Technology Transfer Office	84%
A Research Foundation	41%

The annual number of patents awarded to faculty and staff varied substantially among institutions: 5% averaged over 50 per year; 18% averaged 25 to 50; 26% averaged between 10 and 24; 29% had between 3 and 9; and 20% had two or fewer, on average (Table 12).

Table 12. Patents Awarded, On Average, 2002–2005
Approximately how many patents were awarded to faculty and staff, on average, for each of the last 3 years?

Number of patents	%	institutions	
200+	2%		
100-200	1%		
51-100	2%		
36-50	10%		
25-35	8%		
20-24	6%		
15-19	6%		
10-14	14%		} 53%
5-9	18%		
3-4	11%		
2	10%		
1	3%		
0	7%		

The Advancement or Development Offices of these universities help to solicit funds for research to varying degrees; roughly a quarter were involved to each degree (Table 13).

Table 13. Advancement or Development Office Involvement in Research Funding Solicitations

To what extent is the development or advancement office of the university involved in helping to solicit funds for research?

Very	23%
Somewhat	28%
Slightly	31%
Not at all	18%

Important Trends Affecting the Overall Research Environment

Clearly, declines in federal funding for research are viewed as the biggest trend, positive or negative, affecting the nation’s research universities. State funding, compliance questions, and start-up costs are lower-level negative trends. Positive trends are mentioned much less frequently; the most common is an increase in collaborations among researchers (Table 14).

Table 14. Trends Affecting the Research Environment

Negative	#	Positive/neutral	#
Funding (total)	51	Increased collaboration	9
Federal Funds – decline in (net)	38		
Decline – general	30	Administrative support	5
NIH/NSF	5	Strong, growing	4
Federal climate in general	1	More understanding	1
War related	2		
State	7	Impact on economic development	5
Institution specific	2	Growth in importance of tech research	1
General, non-specific source	3	Helps economic development	1
Decline in all but health research \$	1	Legislators understanding impact	1
		More community support	1
		State understanding impact	1
Compliance total	9		
Compliance: increases (increase costs)	6		
Other	3	More facilities for research	4
Start-up costs	6	Other	
New faculty/researchers	4	More funding	1
Other	2	More faculty applying for grants	1
		More support for graduate students	1
		More corporate interaction (+, -)	1
Impact of U.S. defense work	3	Greater focus on health sciences	1
Fewer intl students/visa issues	2		
Other	2		
Facilities, infrastructure	5		
Outdated, insufficient	3		
Infrastructure needs	2		
Lack of quality personnel	3		
Faculty	1		
Graduate students	1		
Services to PI's	1		
Other			
Politics in research	3		
Greater emphasis on teaching vs. research	1		
Lack of incentives for patents in tenure	1		

RESPONDENT CLASSIFICATION/SURVEY COLLECTION DATA

The majority of institutions responding to this survey were large, public Doctoral/Research -Extensive universities. Results came from 35 states located throughout the United States. (See Table 15.)

Table 15. Information on Survey Participants

Public or private institution		Undergraduate enrollment	
Public	72%	Over 10,000	68%
Private	28%	5,001 to 10,000	17%
		3,001 to 5,000	9%
		1,000 to 3,000	5%
		Less than 1,000	0%
Type of institution		Position	
Doctoral/Research University -Extensive	64%	Administration	88%
		Faculty	61%
Doctoral/Research University -Intensive	36%	Research Director	56%
		Other	4%

State									
NY	8	IL	4	NJ	2	AL	1	NH	1
PA	7	MA	4	NM	2	ID	1	NV	1
CA	6	VA	4	ND	2	IN	1	OR	1
NC	6	MI	3	OK	2	IO	1	SC	1
OH	6	AR	2	TN	2	KS	1	WA	1
TX	6	DC	2	UT	2	LO	1	WV	1
FL	4	MO	2	NV	2	MN	1	WY	1

SUMMARY AND CONCLUSIONS

Among these research directors and administrators, **research is deemed to be as important as**, but not more important than, their **institution’s academic role**.

Policies are not universal. While overall institutional priorities are commonly established, research priorities are less likely to be established. Two-thirds of respondents agree completely that institutional priorities are established, while only one-third agree completely that research priorities are established. Respondents agree only somewhat that research priorities are regularly reviewed or that research infrastructure needs are planned based on priorities. They also agree only somewhat that research priorities are broadly known among faculty. However, two-thirds believe that having institutional research priorities is very important.

When research priorities are established, the senior research administrator, chief academic officer and president/chancellor are most often involved. The majority of respondents believe their institution’s faculty and staff know and embrace the research mission only “somewhat.” A third of the respondents know and embrace the research mission “very well.”

The most common activities used to stimulate the **research culture** are publicity in campus publications and on the web (93%); external publicity (87%); and internal competitions for PI

seed funding (82%). Research administrators are split on the importance of incentives, awards, and other forms of recognition, with half believing they are very important, and 37% believing they are only somewhat important.

Faculty research activities, funding, and results are usually publicized on an ongoing basis using means that include press releases to the general media and internal publications.

Economic development is important. Over half of the universities play a large role in economic development and technology transfer; with the rest playing a slight role. The large majority have an Office of Government Relations (85%) and a Technology Transfer Office (84%) and close to half (41%) have now set up a research foundation. Virtually all have patent and copyright policies that share proceeds between the university and the inventor.

The number of patents awarded yearly varies substantially among these institutions, with some receiving more than 100. Over half of the institutions receive fewer than 15 patents per year.

The **most important trend affecting the overall research environment** is the decline in federal funding. This trend was mentioned by 40% of respondents—more than four times more frequently than any other trend, positive or negative. The next most mentioned trends were the increases in compliance requirements or costs (negative) and an increase in collaboration among researchers (positive).

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