

The 2007 Center for Innovation Survey on

“Exploring Faculty Perceptions of Entrepreneurial Activities”

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“MSCD Faculty Innovative Activities and Perceptions”

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Study Summary

A survey on faculty involvement in innovative activities as well as their perceptions and opinions on related activities was conducted during the spring semester, 2007. A total of 340 questionnaires were distributed to all full-time tenure-track faculty, resulting in 85 effective responses. Based on the faculty’s opinions on a list of innovative activities, the results indicated that most faculty gave high value to innovative activities related to teaching and research, while they generally disapproved activities related to outside activities, in particular those that led to monetary gains. The results offer valuable foundation for further research on this important subject matter and may shed light on how to better manage and stimulate faculty innovative activities at MSCD.

INTRODUCTION

Housed in the Office of Academic Affairs, the goal of the Center for Innovation (CI) is to make entrepreneurship a college-wide and community-wide experience. Founded on a broad definition of entrepreneurship that includes social, intellectual, and economic value created through the application of entrepreneurial principles, the CI was established to expand the understanding and adoption of entrepreneurship in various disciplines at MSCD. The CI will take an inter-disciplinary approach that provides benefits to many fields. The CI will encourage and assist the expansion and education of entrepreneurship at MSCD and cultivate the entrepreneurial attitude in various areas of study. MSCD's CI is unique in that it is the first center in the country designed solely at the baccalaureate level and it is focused on helping minority stakeholders and non-traditional students.

Commissioned by the CI Task Force, Professor Chang of marketing and Assistant Professor Dempere of finance volunteered to conduct a campus-wide survey to investigate the overall entrepreneurial activities at Metro during the spring term 2007.

Purpose of the Survey

CI would like to identify the needs of important stakeholders internal to MSCD and the capacity to which the CI can deliver services to these constituencies. CI also recognizes the possible concerns from faculty and the need to develop incentives for them. The present survey project was intended to provide significant information to address the above issues.

Research Objectives

1. Conduct inventory of current entrepreneurial activities/initiatives at Metro State.
2. Determine the academic climate/receptivity toward initiating and participating in entrepreneurial and innovative campus projects.

Research process

The responsibilities of Faculty Fellows for Survey are the following:

1. Develop the survey instrument, to be approved by a CI task force, to achieve survey goals.
2. Develop a plan to administer the survey with any accompanying budget items.
3. Create a plan to encourage faculty survey participation.
4. Develop a plan to disseminate survey results.

METHODOLOGY

Questionnaire Development

A survey instrument was developed based on a questionnaire given by the CI Task Force (see Original Questionnaire in Appendix E). The survey instrument was significantly modified and changed to be compatible with the needs of Metro State.

The following describes the activities performed by the Faculty Fellows:

Approximate Date of Completion	Survey Activities	Completed by
4/3	<ul style="list-style-type: none"> ■ Deliver the final survey instrument to CI Task Force 	Fellows
4/5	<ul style="list-style-type: none"> ■ Prepare cover letter and attach it to the questionnaire 	Dempere
4/20	<ul style="list-style-type: none"> ■ Copy and distribute the questionnaire package to all faculty 	Academic Affairs
4/27-5/7	<ul style="list-style-type: none"> ■ Complete data collection ■ Retrieve completed questionnaires ■ Review and process returned surveys 	Fellows Fellows Fellows
4/27-5/9	<ul style="list-style-type: none"> ■ Input, process, and edit data 	Fellows & Work
5/10	<ul style="list-style-type: none"> ■ Convert into SPSS data format, process, edit the SPSS data 	Study students, under the supervision of Dr. Chang
5/11	<ul style="list-style-type: none"> ■ SPSS data ready for analysis 	Fellows
5/13	<ul style="list-style-type: none"> ■ Analyze data and prepare report ■ Deliver the survey report ■ Presentation ■ Distribute summary report to all faculty 	Fellows Fellows Fellows TBD

Task Completed

Survey production and distribution:

The survey was photocopied and distributed via campus mail to all full-time MSCD faculty in large envelopes from Academic Affairs. All completed questionnaires were first returned to Ms. Bonnie Savone, Executive Assistant to the Provost and Vice President for Academic Affairs, and then delivered to Dr. Chang for screening and editing, before keying. All questionnaires were examined for their validity and reliability by careful reviewing, processing, editing, and transforming. A total of 340 questionnaires were distributed, resulting in 85 usable completed questionnaires, or a response rate of 23%, which is better than expected (15%).

RESULTS

A complete report of basic results for all questions can be found in Summary of Survey Results in Appendix A. We report key summary results by question numbers with key statistics provided in this section.

Q1: How important the following are in describing “innovative faculty”?

1= very detrimental; 4=midpoint; 7=very beneficial

Among all innovative activities, all but one have positive (beneficial) mean value (>4). The top 5 and bottom 5 are reported here. For a complete list and means, please see Summary of Survey Results in Appendix A.

A quick glance of the top 5 activities reveals that they are all related to teaching and research. On the other hand, faculty has a general dislike of outside activities, especially those that lead to monetary gains.

Top 5:

Means	Items
5.85	j. Designing a new course
5.85	o. Incorporating themes of creativity, innovation or problem solving into coursework
5.64	m. Conducting basic or academic research that benefits academia
5.61	p. Integrating new teaching methods and tools into courses
5.56	b. Collaborating on research with other Metro State colleagues

Bottom 5:

Means	Items
3.27	s. Starting or running a non-consulting business while employed by Metro State
4.13	r. Consulting with other organizations for a fee
4.26	y. Earned a supplemental income outside of your college salary, from sources closely related to your area of professional expertise
4.54	t. Serving on organizational boards
4.64	g. Managing a research lab, computer lab, or equivalent setups

Q2: Innovative Activity Engagement and Reward

There are two parts for Question 2: whether or not a faculty member has engaged in any of the listed innovative activities in the last 3 years and whether or not Metro should reward such activity. In the table below, innovative activities are ordered by the percentage of respondents who indicated that “Metro should reward” the listed activity, including % of respondents who had “Engaged in last 3 years” and “gap %, which is the difference between % “Metro should reward” and % “Engaged in last 3 years.” A large gap indicates that there is a lack of engagement in an activity that is highly valued by faculty as a whole.

Engaged in last 3 years	Metro should reward	Gap	Activities:
18.9	89.0	70.1	a. Publishing a textbook
64.4	86.5	22.1	b. Collaborating on research with other Metro State colleagues
70.3	85.1	14.8	m. Conducting basic or academic research that benefits academia
69.9	82.4	12.5	l. Leading a curriculum re-design effort
87.8	82.4	-5.4	j. Designing a new course
47.9	78.4	30.5	c. Being an editor or on a reviewer/advisory board of a refereed journal
50.0	78.4	28.4	u. Organizing a conference or an interest group in an academic association
90.5	78.4	-12.1	o. Incorporating themes of creativity, innovation or problem solving into coursework
36.5	77.0	40.5	d. Seeking external grant funds for research
66.2	77.0	10.8	n. Engaging students in service learning or research projects
97.3	75.7	-21.6	p. Integrating new teaching methods and tools into courses
29.7	72.6	42.9	q. Teaching in a cross-disciplinary program
49.3	70.3	21.0	e. Collaborating on research with non-Metro State colleagues
71.2	67.6	-3.6	k. Organizing or participating in educational events for non-academic audience
4.1	66.2	62.1	f. Obtaining a patent or copyright for a new technology
38.4	66.2	27.8	h. Conducting applied research that benefits non-academia
63.5	64.9	1.4	x. Engaging in service / public engagement activities with community groups
15.1	58.1	43.0	g. Managing a research lab, computer lab, or equivalent setups
54.1	55.4	1.3	w. Consulting with other organizations on a pro bono basis
6.8	52.7	45.9	i. Working with industry to commercialize a new technology
52.7	51.4	-1.3	t. Serving on organizational boards
18.9	42.5	23.6	v. Lobbying or testifying in one's field of expertise
43.2	33.8	-9.4	y. Earned a supplemental income outside of your college salary, from sources closely related to your area of professional expertise
32.4	28.4	-4.0	r. Consulting with other organizations for a fee
4.1	10.8	6.7	s. Starting or running a non-consulting business while employed by Metro State

In addition, it is important to point out activities with Gap > 25%: These are activities that warrant extra support due to the lack of engagement.

Engaged in last 3 years	Metro should reward	Gap	Activities:
18.9	89.0	70.1	a. Publishing a textbook
4.1	66.2	62.1	f. Obtaining a patent or copyright for a new technology
6.8	52.7	45.9	i. Working with industry to commercialize a new technology
15.1	58.1	43.0	g. Managing a research lab, computer lab, or equivalent setups
29.7	72.6	42.9	q. Teaching in a cross-disciplinary program
36.5	77.0	40.5	d. Seeking external grant funds for research
47.9	78.4	30.5	c. Being an editor or on a reviewer/advisory board of a refereed journal
50.0	78.4	28.4	u. Organizing a conference or an interest group in an academic association
38.4	66.2	27.8	h. Conducting applied research that benefits non-academia

It is equally important to point out activities with Gap < 0: These are activities that Metro faculty has done more than their fare share of value. It indicates that the present level of support for such activities is adequate. No additional support is necessary for these activities.

Engaged in last 3 years	Metro should reward	Gap	Activities:
52.7	51.4	-1.3	t. Serving on organizational boards
71.2	67.6	-3.6	k. Organizing or participating in educational events for non-academic audience
32.4	28.4	-4.0	r. Consulting with other organizations for a fee
87.8	82.4	-5.4	j. Designing a new course
43.2	33.8	-9.4	y. Earned a supplemental income outside of your college salary, from sources closely related to your area of professional expertise
90.5	78.4	-12.1	o. Incorporating themes of creativity, innovation or problem solving into coursework
97.3	75.7	-21.6	p. Integrating new teaching methods and tools into courses

Finally, there is one activity with extremely low value in % “Metro should reward”. This activity should be discouraged.

Engaged in last 3 years	Metro should reward	Gap	Activities:
4.1	10.8	6.7	s. Starting or running a non-consulting business while employed by Metro State

Q3: How should Metro State reward faculty for innovative activities?

The following are % checked off by respondents:

%	How should Metro State reward faculty for innovative activities?
83.5	Salary increases
80.0	Considered in tenure decision
72.9	Reduced course load (reassigned time)
71.8	Promotions
60.0	More research support
51.8	More teaching support

Q4: How would you describe the culture of Metro State?

4.74	Enterprising	...	1..... ...x.....7	...	Traditional
4.50	Innovative	...	1..... ...x.....7	...	Imitative
3.14	Reactive	...	1.....x.....7	...	Proactive
4.34	Dynamic	...	1..... ...x.....7	...	Inactive
4.51	Progressive	...	1..... ...x.....7	...	Conservative
2.22	Bureaucratic	...	1.....x.....7	...	Flexible

Q5: In your opinion, how has Metro State treated creativity by its Faculty?

3.44	Stifles creativity	1.....x.....7	Promotes creativity
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Questions 4 and 5 are to gauge the overall innovative climate at Metro. Overall, it is important to note that respondents perceive Metro as bureaucratic and reactive, the two descriptives that are least favorable. The responses to these items show that there is a need to stimulate and support innovative activities at MSCD with less bureaucratic flavor.

Q6: Have you encountered any barriers that have impeded your innovative activities? 66.2% said “Yes.”

Surprisingly, almost two third of respondents indicated that they have encountered barriers that have impeded their innovative activities. They were asked to describe the barriers that they had encountered. Detailed comments are provided in Appendix B.

Q7. If Metro State were to provide learning opportunities that are aimed at assisting faculty in being more innovative, would you be interested in participating? 78.9% said “Yes “.

The vast majority (78.9%) of respondents indicated that they would be interested in participating in innovative learning opportunities. The following are summary findings on their preference for the format and topics.

Q7b: Which format of learning opportunities below would suit your needs?

%	Which format of learning opportunities below would suit your needs?
62.2	Multiple short workshop sessions (1 to 1½ hours)
43.2	Half-day workshop
32.4	Online courses
27.0	Day conferences
18.9	Full-day workshop
17.6	Multi-week training course
16.2	Weekend conferences

Q7c: Which of the following learning opportunity topics will you be interested in:

%	Which of the following learning opportunity topics will you be interested in:
58.1	Incorporating creativity, innovation, or problem solving in the classroom
35.1	Grant writing
27.0	Community leadership
21.6	Intellectual property and technology transfer for the academic researcher
14.9	Industry collaboration for the academic researcher
9.5	Career management and development
8.1	Non-faculty career alternatives
5.4	Writing a business plan
5.4	Creating and managing a small business or organization

Q8: Which of the following innovative learning opportunities should be made available for students?

Finally, regarding the innovative learning opportunities for students, the following are the percentages of respondents who believe that these opportunities should be offered.

%	Which of the following innovative learning opportunities should be made available for students?
68.0	Self-employment skills
68.0	Career Management and Development
61.3	Industry collaboration for students
61.3	Community leadership
56.0	Writing a business plan
49.3	Creating and managing a small business or organization
49.3	Managing a career innovatively
28.0	Intellectual property management for students

ADDITIONAL ANALYSIS

Each question was analyzed based on some demographic variables included at the end of the survey. Among such variables are, gender, school, and age. These variables were used to find significant differences on each alternative of some questions of the survey. The variables Employment Status and Rank have not enough observations on each category to provide reliable results. All Tables mentioned in this section can be observed on Appendix E at the end of this report.

Gender:

There are significant differences on question 1 about the perceptions on how beneficial or detrimental are some activities in describing “innovative faculty”; these activities are: "l. leading a curriculum re-designs effort" and "w. Consulting with other organizations on a pro bono basis" Table 1, Appendix E, shows that female professors perceive these two activities as more beneficial in describing "innovative faculty" than their male counterparts. Tables 2 and 3 on Appendix E show that both—the independent sample test and the Mann-Whitney nonparametric test—provide evidence of significant differences at conventional levels of 1 percent and 10 percent respectively.

Question 2a deals about a list of innovative activities that the faculty has engaged in the last three years. The only activity with significant differences at conventional levels is "r. Consulting with other organization for a fee". Indeed, Table 4 shows that male professors have engaged more often than their female counterparts in this particular activity. Table 5 shows that this result is statistically significant at 10 percent level of confidence based on the Mann-Whitney nonparametric test.

Question 2b asks about whether or not Metro State should reward faculty for their engagement in some activities. The only activity that has differences based on the gender is “l. Leading a curriculum re-design effort” Table 6 shows that females professors have shown a stronger support for rewarding curriculum design-related activities than their male counterparts. Table 7 shows that this result is statistically significant at 10 percent level of confidence based on the Mann-Whitney nonparametric test. There are no significant differences in question #3 based on gender

Question 4 consists of a Likert scale where the faculty must describe the culture of Metro State by circling the number for each pair of six different choices or characteristics. The only significant difference by gender for this question is in the option "Enterprising... 1 2 3 4 5 6 7 ...Traditional" Table 8 shows that female faculty perceived Metro State more traditional (5) than their male counterparts (4.46). Tables 9 shows that the independent sample test provides evidence that these differences are statistically significant at .1 percent level of confidence.

Question 7 also consist of a Likert scale where the faculty must express his or her interest in learning opportunities aimed at helping faculty in being more innovative. Table 10 shows a significant difference by gender. Female faculty shows more interest in learning opportunities than their male equals. Table 11 shows that this result is

statistically significant at 10 percent level of confidence based on a Mann-Whitney nonparametric test.

In question 7b the faculty must express his or her interest in a list of learning opportunities aimed at helping them in being more innovative. Table 12 shows a significant difference by gender in the option of "online courses", where female faculty expressed more than twice the interest of male faculty. Tables 13 and 14 on Appendix E show the independent sample test and the Mann-Whitney nonparametric test respectively. Both tests provide evidence that the difference in this learning opportunity by gender is statistically significant at .1 percent level of confidence on both tests.

In question 8 the faculty must choose among some learning opportunities that should be made available for students. Table 15 shows a significant difference by gender in the option of "Intellectual property management for students". Here, male faculty selected more than three times this choice than their female counterparts. Tables 16 and 17 on Appendix E show that both the independent sample test and the Mann-Whitney nonparametric test both provide evidence that the difference in this choice by gender is statistically significant at both .1 and 10 percent level of confidence respectively.

There are no significant differences in questions 3, 5, 6, and 7c based on gender.

Schools:

There are many significant differences on question #1 about faculty perception of those activities that best describe the definition of "innovative faculty" when comparing the three different schools at Metro State. Each school was compared one each other using the Mann-Whitney nonparametric test given the small number of observations for some schools - for example, the School of Business (BUS) has just 16 observations.

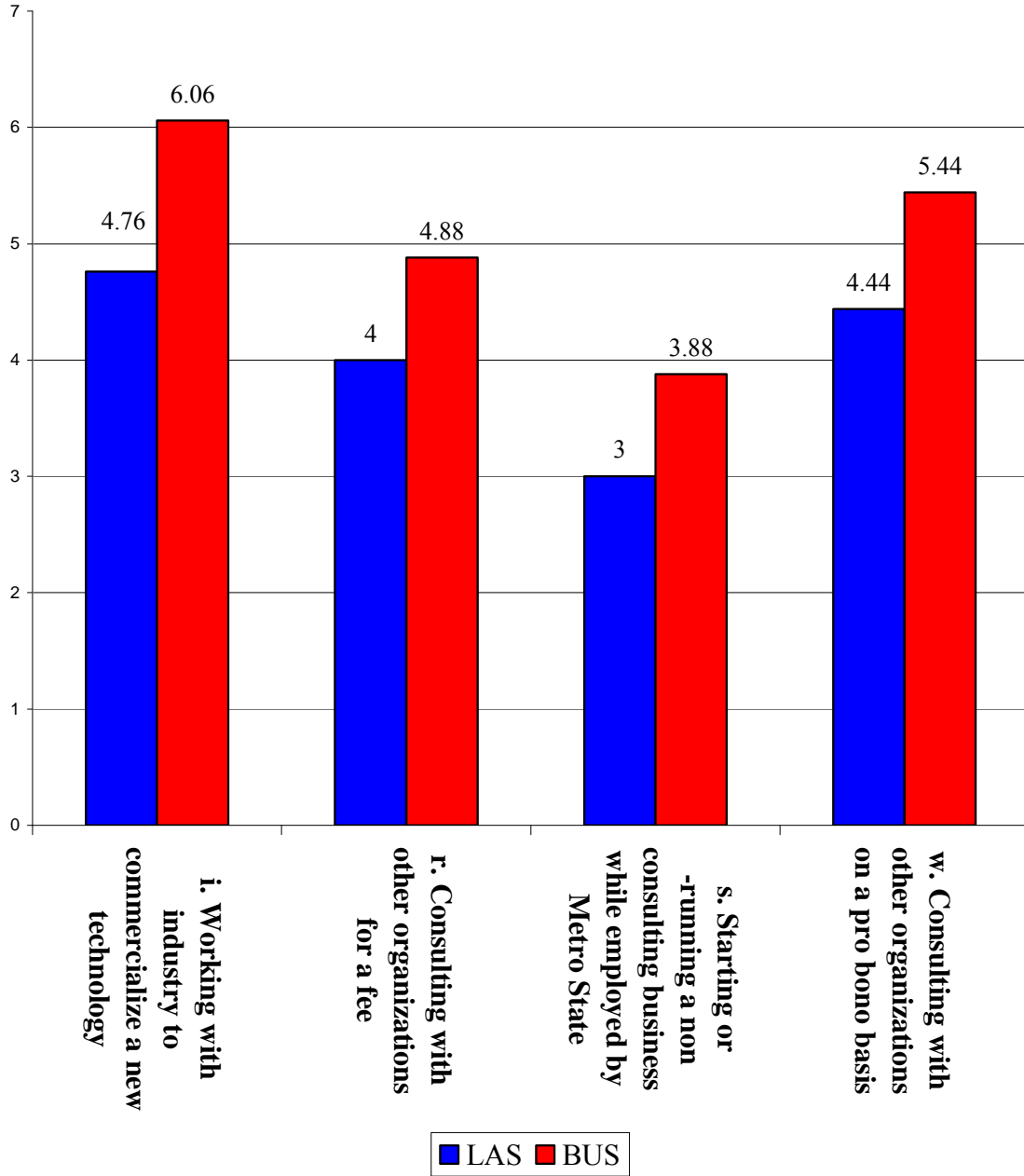
On one hand, Table 18 shows that between the School of Letters, Arts, and sciences (LAS) and BUS there are four activities that are perceived differently and they are "i. Working with industry to commercialize a new technology", "r. Consulting with other organizations for a fee", "s. Starting or running a non-consulting business while employed by Metro State", and "w. Consulting with other organizations on a pro bono basis". For each one of these activities, the faculty at the BUS consistently perceives these activities as more beneficial in describing "innovative faculty" than the faculty at LAS. Table 19 shows that the Mann-Whitney nonparametric test provides evidence that these differences in perceptions are significant at conventional levels.

On the other hand, Table 20 shows that between BUS and the School of Professional Studies (SPS), there are six activities that have significant different values that measure faculty perception, and they are: "a. Publishing a textbook", "d. Seeking external grant funds for research", "e. Collaborating on research with non-Metro State colleagues", "f. Obtaining a patent or copyright for a new technology", "i. Working with industry to commercialize a new technology", "r. Consulting with other organizations for a fee". Again, for each one of these activities the BUS's faculty consistently perceives these activities as more beneficial in describing "innovative faculty" than the SPS's

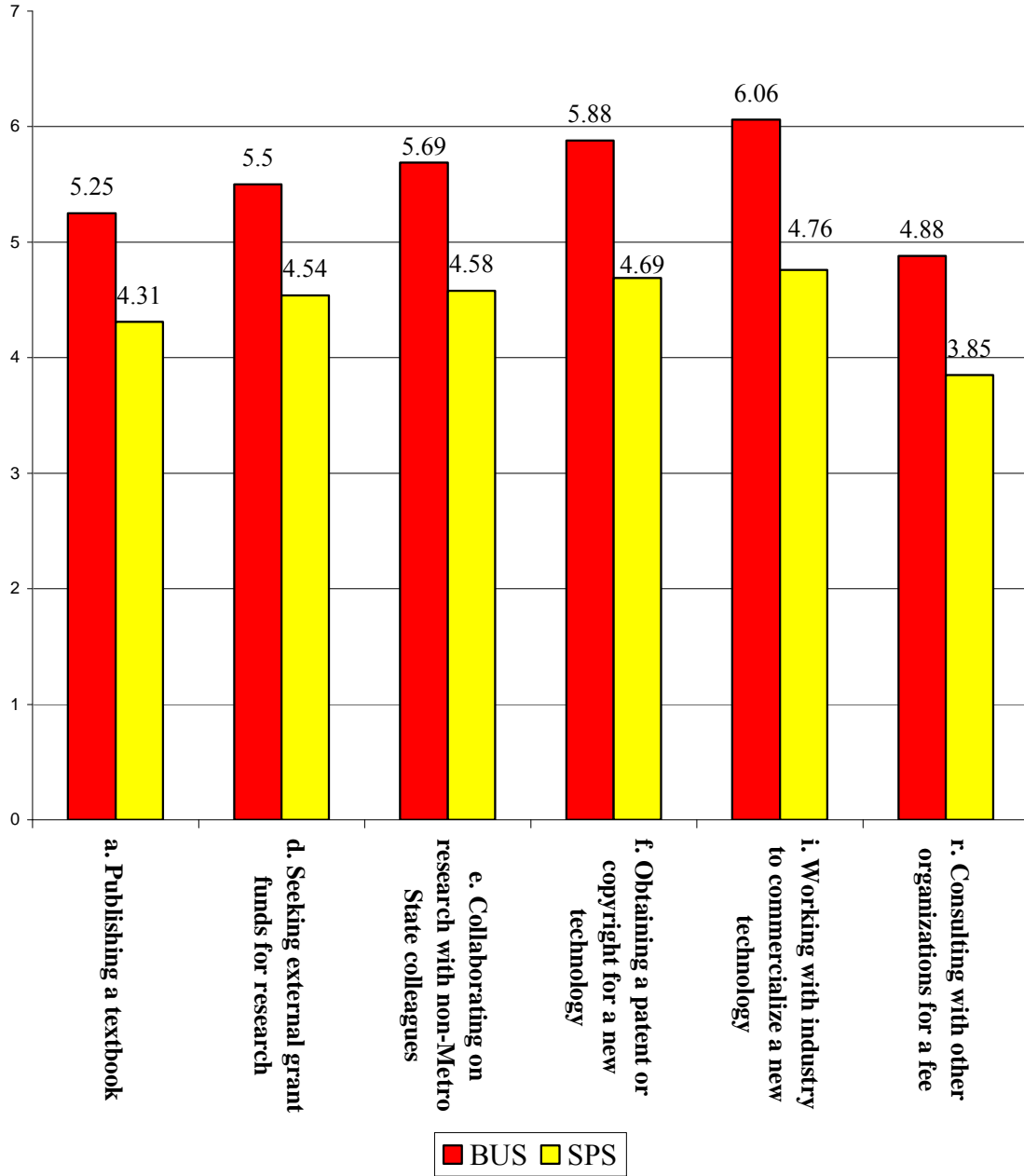
faculty. Table 21 provides evidence that these differences are statistically significant at conventional levels.

Finally, Table 22 shows that between LAS and SPS, there are eleven activities that differ significantly in value. These activities to measure faculty perceptions are the following: "a. Publishing a textbook", "b. Collaborating on research with other Metro State colleagues", "c. Being an editor or on a reviewer/advisory board of a refereed journal", "d. Seeking external grant funds for research", "e. Collaborating on research with non-Metro State colleagues", "f. Obtaining a patent or copyright for a new technology", "g. Managing a research lab, computer lab, or equivalent setups", "j. Designing a new course", "m. Conducting basic or academic research that benefits academia", "p. Integrating new teaching methods and tools into courses", and "t. Serving on organizational boards." For almost all of these activities the LAS's faculty perceive these activities as more beneficial in describing "innovative faculty" than the SPS's faculty, with the exceptions of activities j, p, and t. In these last three activities the values assigned by the LAS's faculty are lower than those assigned by the SPS's faculty. Table 23 shows evidence that these differences are statistically significant at conventional levels. In order to get better picture of these results, the following charts attempts to summarize them:

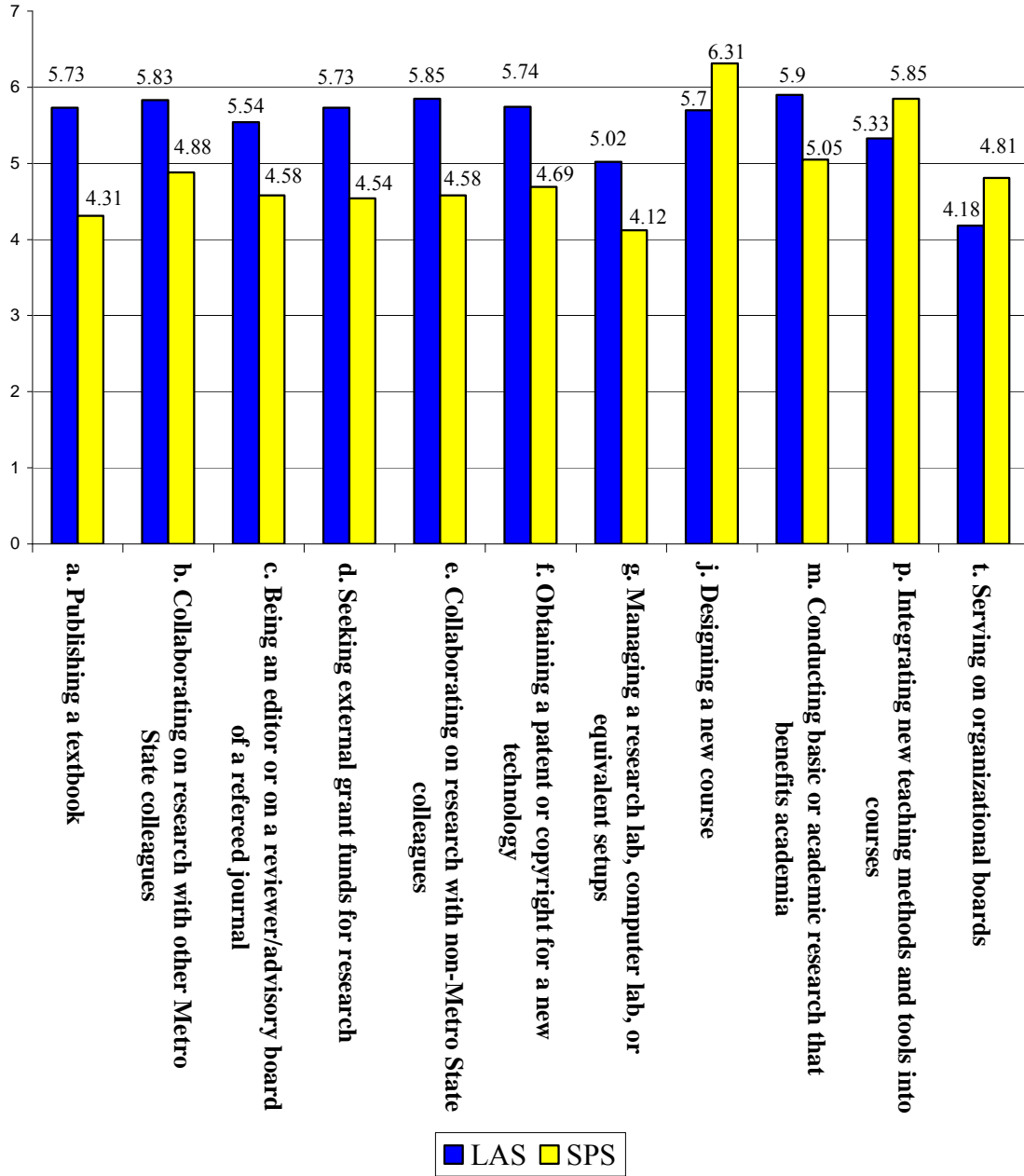
Means of Activities from Question #1 that are Statistically Different Between LAS and BUS



Means of Activities from Question #1 that are Statistically Different Between BUS and SPS



Means of Activities from Question #1 that are Statistically Different Between BUS and SPS



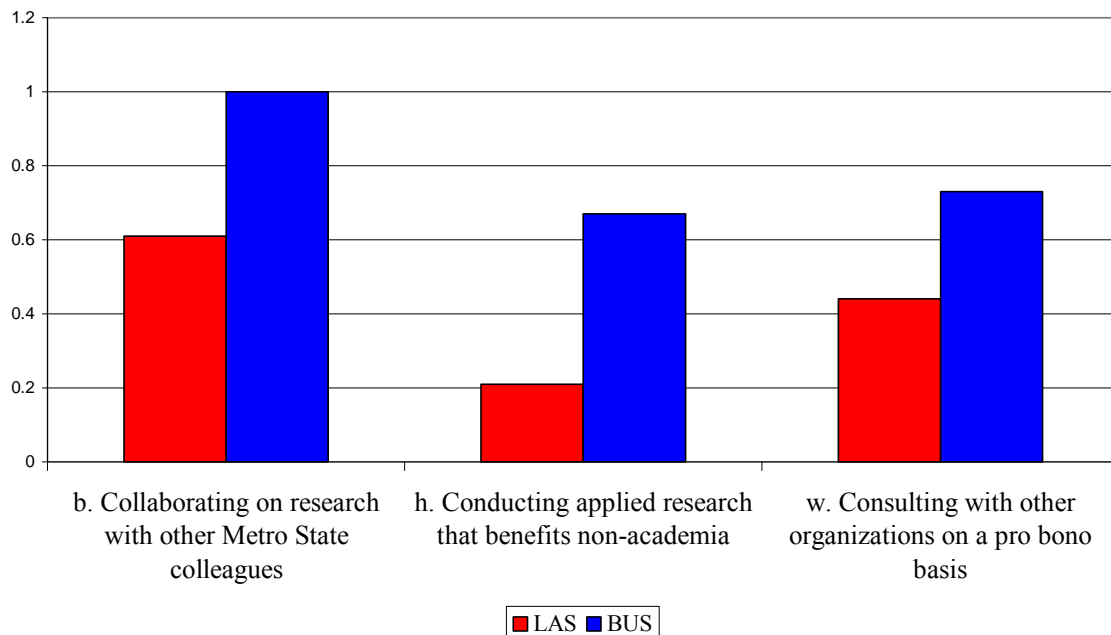
There are also many significant differences on question #2a about a list of innovative activities that faculty has engaged in the last three years. First, Table 24 shows that between LAS and BUS, there are three activities where faculty has engaged, and they are: "b. Collaborating on research with other Metro State colleagues", "h. Conducting applied research that benefits non-academia", "w. Consulting with other organizations on

a pro bono basis." For each of these activities, the BUS has engaged just in activity b more than LAS. In the other two activities—h and w—the situation is otherwise. Table 25 provides evidence that these differences are statistically significant at conventional levels.

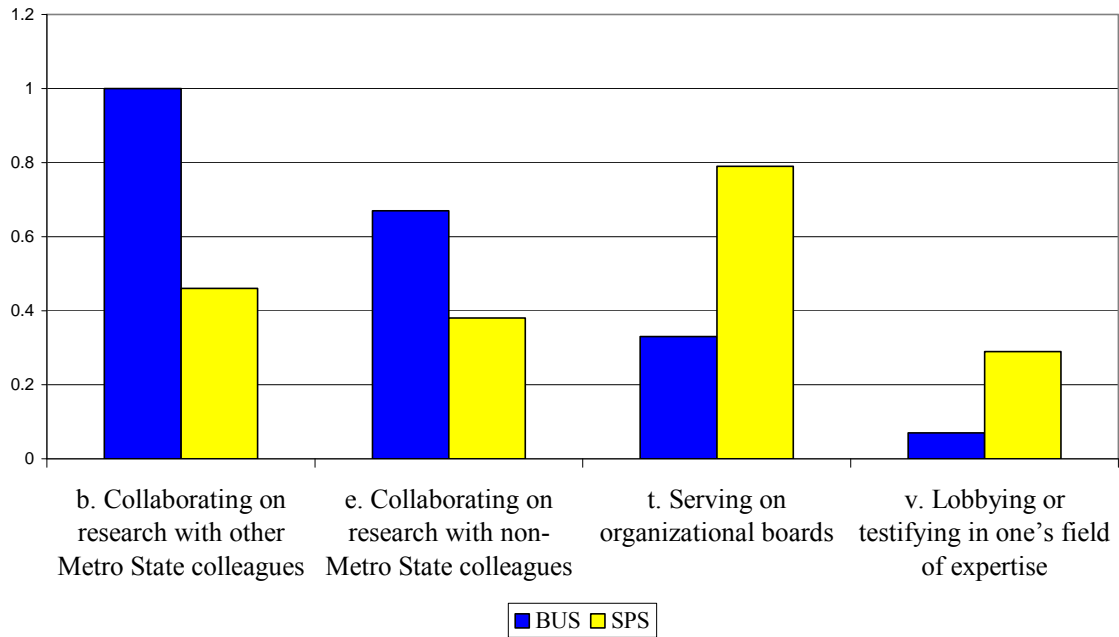
Second, Table 26 shows that between LAS and SPS, there are also just three activities where faculty has engaged in the last three years, and they are: "o. Incorporating themes of creativity, innovation or problem solving into coursework", "t. Serving on organizational boards", and "x. Engaging in service / public engagement activities with community groups." For each o these activities, faculty at LAS has engaged more in activity o than faculty at SPS. In the remaining two activities - t and x - the results are the opposite. Table 27 provides evidence that these differences are statistically significant at conventional levels.

Finally, Table 28 shows that between BUS and SPS, there are four activities where faculty has engaged in the last three years, and they are: "b. Collaborating on research with other Metro State colleagues", "e. Collaborating on research with non-Metro State colleagues", "t. Serving on organizational boards", and "v. Lobbying or testifying in one’s field of expertise". For each of these activities, BUS faculty has engaged more in activities b and e than SPS faculty, while SPS faculty has engaged more in activities t and v than BUS faculty. Table 29 provides evidence that these differences are statistically significant at conventional levels. In order to get better picture of these results, the following charts attempts to summarize them:

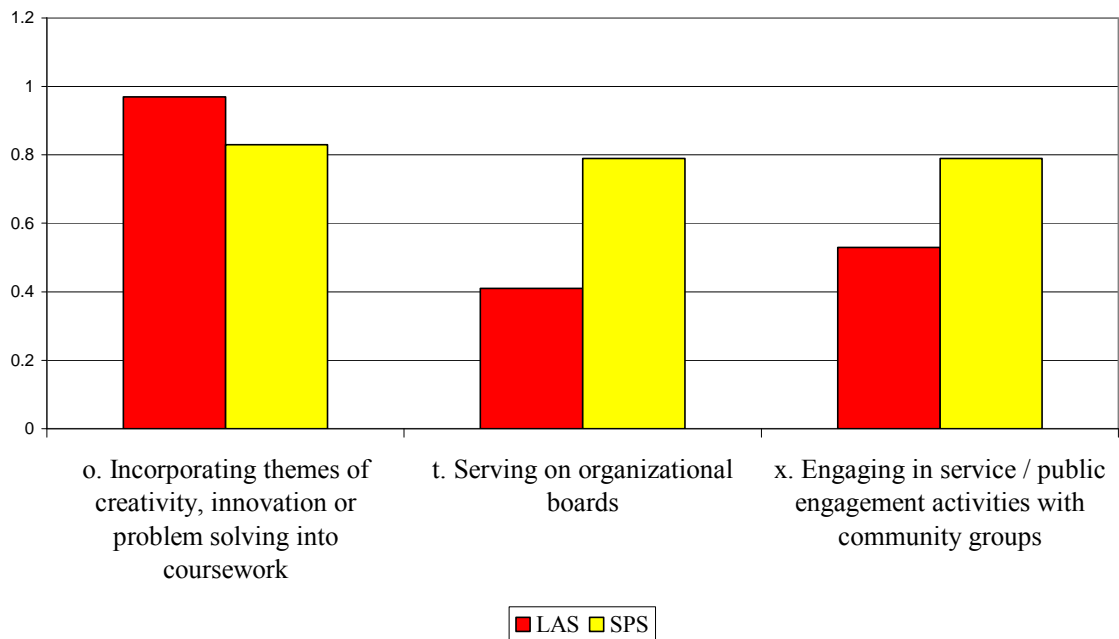
Significant Differences in Means of Innovative Activities that Faculty has Engaged in the Last Three Years Between LAS and BUS



**Significant Differences in Means of Innovative Activities that Faculty
has Engaged in the Last Three Years Between BUS and SPS**



**Significant Differences in Means of Innovative Activities that Faculty
has Engaged in the Last Three Years Between LAS and SPS**

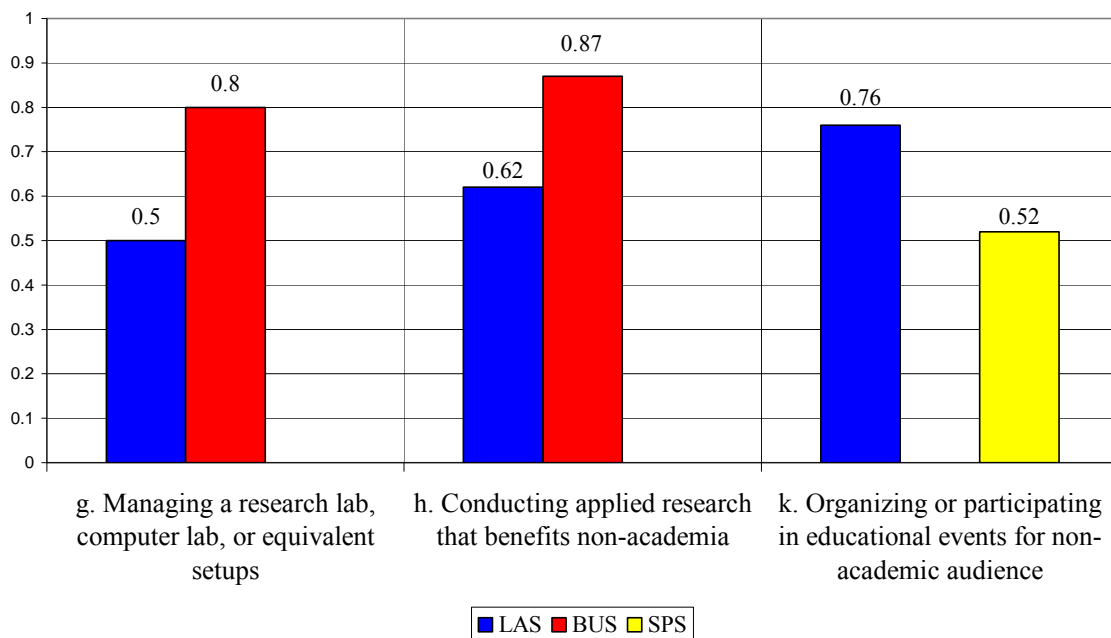


Some significant differences also exist on question #2b which asks about whether or not Metro State's faculty should be rewarded for their engagement in some activities. Table 30 shows that between LAS and BUS there are two activities where faculty have different perceptions about its rewarding, and they are: "g. Managing a research lab,

computer lab, or equivalent setups" and "h. Conducting applied research that benefits non-academia" In both activities, BUS faculty have a stronger perception about rewarding these activities than LAS faculty. Table 31 provides evidence that these differences are statistically significant at conventional levels.

The Mann-Whitney nonparametric test produces no significant results for question #2b for BUS and SPS. However, Table 32 shows that there is just only one activity that faculty in LAS have a different perception than faculty in SPS. Indeed, LAS faculty perceive that "k. Organizing or participating in educational events for non-academic audience" must be rewarded and this perception is stronger than faculty in SPS. Table 33 provides evidence that these differences are statistically significant at conventional levels. In order to provide a better picture of these results, the following charts summarize these results.

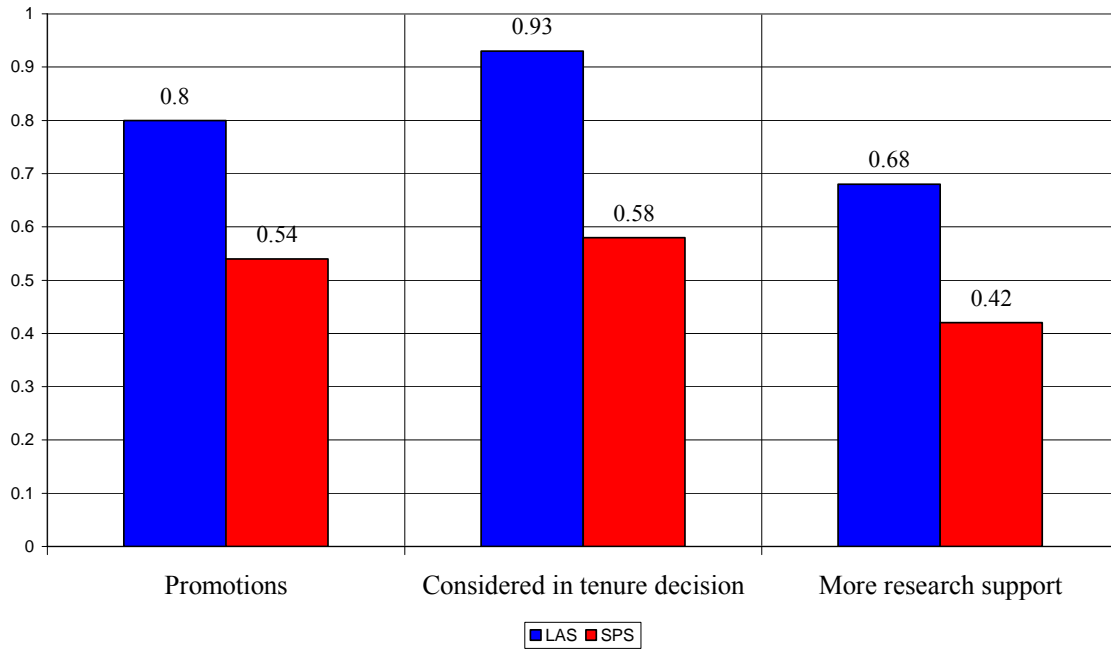
Significant Differences in Means by School about Perceptions on Whether or not Metro State Should Reward Some Activities



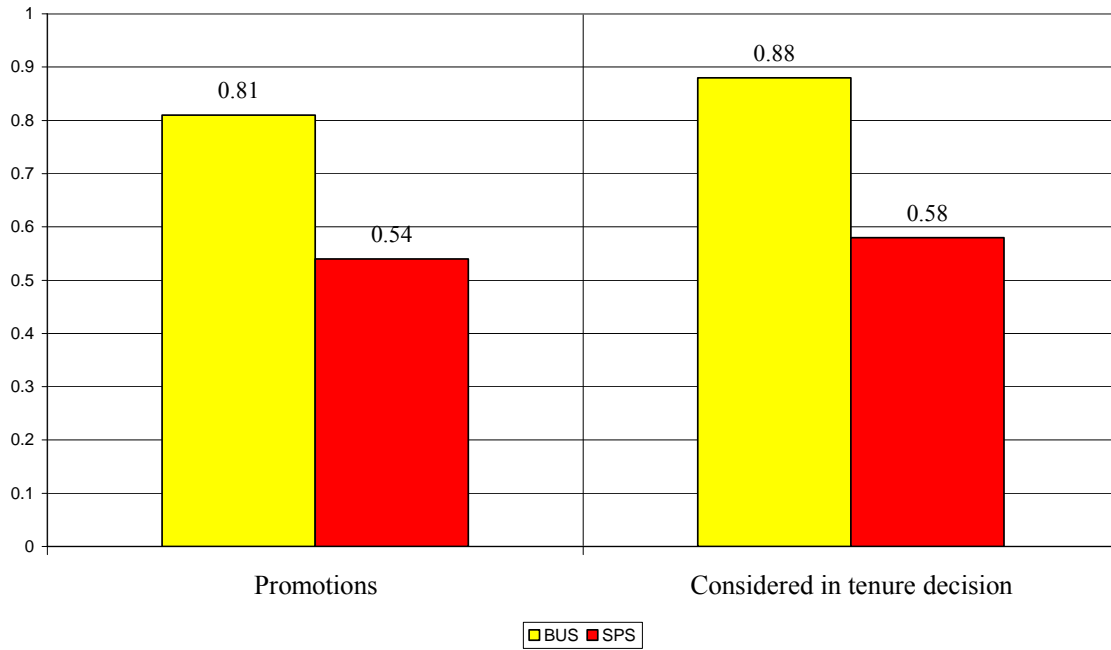
Significant results also exist in question 3, which asks about how Metro State should reward faculty for innovative activities. Table 34 shows three ways in which innovative activities should be rewarded where professors in LAS and SPS differ significantly and they are "Promotions", "Considered in tenure decision", and "More research support". In these three choices LAS faculty consistently perceive these forms of reward more convenient to incentive innovative activities than SPS faculty. Table 35 provides evidence that these differences are statistically significant at conventional levels. Also, table 36 shows that just two forms of rewarding are perceived differently for faculty at BUS and for faculty at SPS, and they are "Promotions" and "Considered in tenure decision". In both forms of reward, faculty at BUS perceives them as more

effective than faculty at SPS. Table 37 provides evidence that these differences are statistically significant at conventional levels. Finally, the Mann-Whitney nonparametric test produces no significant results in question 3 for LAS and BUS. These results can also be observed in the following charts:

**Means of Forms of Reward from Question #4 that are Statistically Different
Between LAS and SPS**

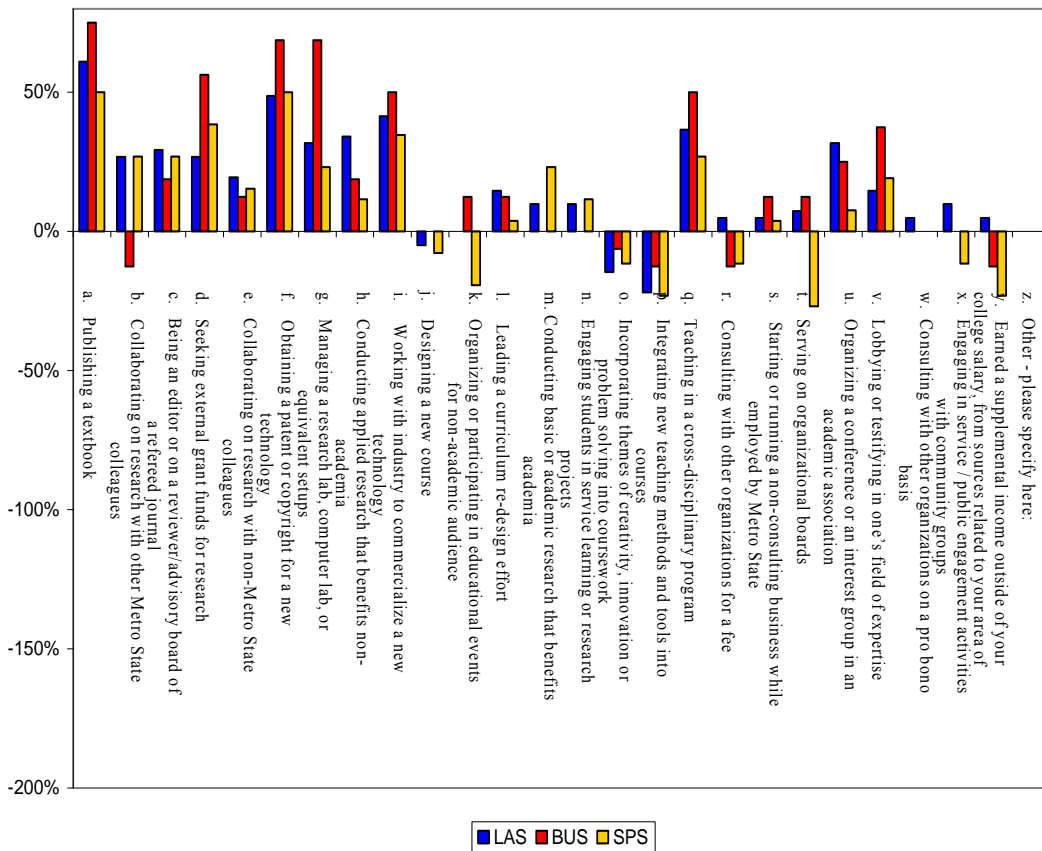


**Means of Forms of Reward from Question #4 that are Statistically Different
Between BUS and SPS**



The following chart provides a graphical representation of the GAP by school. The chart contains just the GAP means for each school: LAS, SPS and BUS.

GAP by School



The Mann-Whitney nonparametric test produces no significant results in question 4 for any of the three schools at Metro State. The situation is similar in question #5 with the exception of LAS and BUS. Table 38 shows that just LAS and BUS differ significantly in their faculty perceptions about how Metro State has treated creativity by its Faculty based on the following Likert scale: “Stifles creativity... 1 2 3 4 5 6 7 ...Promotes creativity” The results suggest that the faculty at BUS perceived that Metro States promotes creativity more than what perceive the faculty at LAS.” Table 39 provides evidence that these differences are statistically significant at conventional levels.

A different situation occurs on question 7c where the Mann-Whitney nonparametric test produces no significant results but just for BUS and SPS. However, significant results can be observed in the case of BUS and LAS as well as in the case of LAS and SPS. This question is about the different learning opportunity topics that the faculty might be interested in. Table 40 shows that there are four learning opportunity topics where faculty at LAS and BUS differ significantly and they are "Industry collaboration for the academic researcher", "Grant writing", "Writing a business plan", and "Creating and managing a small business or organization." For each one of these topics, faculty at BUS has expressed more interest than faculty at LAS, which the exception of the topic "Grant writing", where the faculty at LAS has expressed more interest than faculty at BUS. Table 41 provides evidence that these differences are statistically significant at conventional levels. Similarly, Table 42 shows that there are

four learning opportunity topics where faculty at BUS and SPS differ significantly and they are "Industry collaboration for the academic researcher", "Grant writing", "Writing a business plan", and "Creating and managing a small business or organization." For each one of these topics, faculty at BUS has expressed more interest than faculty at SPS, which the exception of the topic "Grant writing", where the faculty at SPS has expressed more interest than faculty at BUS. Table 43 provides evidence that these differences are statistically significant at conventional levels.

Significant results can be observed in question 8, which asks about the faculty's opinion about those innovative learning opportunities that should be made available for students. Table 44 shows that the faculty at BUS consistently perceives three innovative learning opportunities that should be available to student as more important than faculty at LAS, and they are: "Self-employment skills", "Writing a business plan", and "Creating and managing a small business or organization". Table 45 provides evidence that these differences are statistically significant at conventional levels. Similarly, Table 46 shows that the BUS faculty perceives the innovative learning opportunity of "Self-employment skills" that should be available to students as more relevant than SPS faculty. Table 47 provides evidence that these differences are statistically significant at conventional levels.

Age:

There are six age ranges with low number of observations per range. In order to have enough observations, two categories were considered: less than or equal to 45 years old and greater than 45 years old. There are significant differences on question 1 about the perceptions on how beneficial or detrimental are some activities in describing "innovative faculty." Table 48 shows that these activities are the following: "a. Publishing a textbook," "b. Collaborating on research with other Metro State colleagues," "k. Organizing or participating in educational events for non-academic audience," "m. Conducting basic or academic research that benefits academia," "n. Engaging students in service learning or research projects," "r. Consulting with other organizations for a fee," "u. Organizing a conference or an interest group in an academic association," "x. Engaging in service / public engagement activities with community groups." Table 48 also shows that professors greater than 45 years old perceive these activities as more beneficial in describing "innovative faculty" than their younger counterparts. Table 49 provides evidence that these differences are statistically significant at conventional levels.

Question 2a asks about a list of innovative activities that faculty has engaged in the last three years. The activities with significant differences at conventional levels are the following: "a. Publishing a textbook," "b. Collaborating on research with other Metro State colleagues," and "k. Organizing or participating in educational events for non-academic audience." Table 50 shows that young professors (≤ 45 years old) have engaged more often in activities b and k, while their older counterparts have engaged more in activity a. Table 51 shows evidence that these differences are statistically significant at conventional levels.

Question 2b asks about whether or not Metro State should reward faculty for their engagement in some activities. The only activities that have differences based on the age

of the respondents are “k. Organizing or participating in educational events for non-academic audience” and "t. Serving on organizational boards." Table 52 shows that old professors have show a stronger support for rewarding these two activities than their younger counterparts. Table 53 shows evidence that these differences are statistically significant at conventional levels. There are no significant differences in questions 3, 4, 5, 6, 7, 7b, 7c, and 8 based on age.

Summary of question Q6b: Please describe the barriers that you have faced in your efforts to be more innovative at Metro State

The different answers to this open question can be classified as follows:

Type of reason	No
Work load and lack of time reasons	25
Monetary and funding reasons	18
Inadequate bureaucratic structures	14
Fear and retaliations	12
Lack of clear guidelines, procedures, and policies, and support	9
Organizational culture	7
Others	7
Lack or inadequate facilities and equipment	4
Lack of interdepartmental initiatives	3
Motivation other than monetary	3

These results suggest that the main barrier that Metro State’s faculty perceive in their efforts to be more innovative is lack of time due to excessive work loads. The second barrier is the lack of financial support, followed by the bureaucracy that currently exists in Metro State.

Another technique to evaluate the different answers to this open question is by counting the words with highest frequency. The result is the following:

Word	Frequency
Time	29 times
Load	14 times
Money and funding	5 + 6 = 11 times respectively
Retaliation	2 times
Jealous	2 times
Punished	2 times

Other interesting words: fear, intimidates, threatened, jealousy, hostile, punitive, retaliation, punished, passive aggressive inaction, block, threat!, barrier, suspicion.

These results suggest that some faculty faces barriers that should not exist in the college, such as threats, retaliations, punishments, etc. This type of barriers should not be tolerated under any circumstances. These answers partially explain the results obtained in questions #4 and #5 using a Likert scale to measure faculty perceptions.

CONCLUSIONS

The results bolstered by solid faculty participation in the survey, present a clear picture on how faculty perceive and assess various innovative activities. The administrators should view this survey as an exploratory study and make a commitment for closer examinations with a series of follow-up studies. Attention should be given to innovative activities with high positive gap values. High-gap activities are highly-valued activities that Metro faculty did not have strong engagement. These activities must be evaluated based on the College's vision and mission statements. For those high-gap activities that are consistent with the College's vision and mission statements, plans and actions are required to close those gaps.

There are significant differences on faculty perceptions based on gender, age, and the school he or she belongs to. These differences should be considered in the design and implementation of policies aimed to incentive innovative activities at Metro State.

The main barrier that Metro State's faculty perceives in their efforts to be more innovative is lack of time due to excessive work loads. The second barrier is the lack of financial support, followed by the bureaucracy that currently exists in Metro State.

Appendices

- A. Summary Survey Results, Key Tables and Charts
- B. Barriers that have impeded Faculty's Innovative Activities at Metro from Q6
- C. Survey Questionnaire
- D. Original CI/UI Questionnaire
- E. Tables

Appendix A:

**Summary Survey Results,
Key Tables and Charts**

The 2007 Center for Innovation Survey

Summary Results

Instructions: Please circle or check the appropriate box that best describes your true opinion for the following questions. There is no right or wrong answer. Your responses will be kept strictly confidential. Only aggregate results will be analyzed and reported.

1. Numerous definitions exist for “innovative faculty.” How beneficial or detrimental do you consider the following activities in describing “innovative faculty”?

<i>How important the following are in describing “innovative faculty”?</i>		Very Detrimental					Very Beneficial	
5.20	a. Publishing a textbook	1	2	3	4	5	6	7
5.56	b. Collaborating on research with other Metro State colleagues	1	2	3	4	5	6	7
5.15	c. Being an editor or on a reviewer/advisory board of a refereed journal	1	2	3	4	5	6	7
5.33	d. Seeking external grant funds for research	1	2	3	4	5	6	7
5.46	e. Collaborating on research with non-Metro State colleagues	1	2	3	4	5	6	7
5.45	f. Obtaining a patent or copyright for a new technology	1	2	3	4	5	6	7
4.64	g. Managing a research lab, computer lab, or equivalent setups	1	2	3	4	5	6	7
5.16	h. Conducting applied research that benefits non-academia	1	2	3	4	5	6	7
5.01	i. Working with industry to commercialize a new technology	1	2	3	4	5	6	7
5.85	j. Designing a new course	1	2	3	4	5	6	7
5.16	k. Organizing or participating in educational events for non-academic audience	1	2	3	4	5	6	7
5.54	l. Leading a curriculum re-design effort	1	2	3	4	5	6	7
5.64	m. Conducting basic or academic research that benefits academia						6	7
5.50	n. Engaging students in service learning or research projects	1	2	3	4	5	6	7
5.85	o. Incorporating themes of creativity, innovation or problem solving into coursework	1	2	3	4	5	6	7
5.61	p. Integrating new teaching methods and tools into courses	1	2	3	4	5	6	7
5.26	q. Teaching in a cross-disciplinary program	1	2	3	4	5	6	7
4.13	r. Consulting with other organizations for a fee	1	2	3	4	5	6	7
3.27	s. Starting or running a non-consulting business while employed by Metro State	1	2	3	4	5	6	7
4.54	t. Serving on organizational boards	1	2	3	4	5	6	7
5.27	u. Organizing a conference or an interest group in an academic association	1	2	3	4	5	6	7
4.76	v. Lobbying or testifying in one’s field of expertise	1	2	3	4	5	6	7
4.76	w. Consulting with other organizations on a pro bono basis	1	2	3	4	5	6	7
5.01	x. Engaging in service / public engagement activities with community groups	1	2	3	4	5	6	7
4.26	y. Earned a supplemental income outside of your college salary, from sources closely related to your area of professional expertise	1	2	3	4	5	6	7
---	z. Other - please specify here:	1	2	3	4	5	6	7

2. The following is a list of innovative activities. (a) In the last 3 years, which of the following activities have you engaged in? (b) Regardless whether or not you have engaged in each activity, in your opinion, should Metro State reward faculty for their engagement with such activity?

Engaged in last 3 years	Metro should reward	Activities:
Yes %	Yes %	
18.9	89.0	a. Publishing a textbook
64.4	86.5	b. Collaborating on research with other Metro State colleagues
47.9	78.4	c. Being an editor or on a reviewer/advisory board of a refereed journal
36.5	77.0	d. Seeking external grant funds for research
49.3	70.3	e. Collaborating on research with non-Metro State colleagues
4.1	66.2	f. Obtaining a patent or copyright for a new technology
15.1	58.1	g. Managing a research lab, computer lab, or equivalent setups
38.4	66.2	h. Conducting applied research that benefits non-academia
6.8	52.7	i. Working with industry to commercialize a new technology
87.8	82.4	j. Designing a new course
71.2	67.6	k. Organizing or participating in educational events for non-academic audience
69.9	82.4	l. Leading a curriculum re-design effort
70.3	85.1	m. Conducting basic or academic research that benefits academia
66.2	77.0	n. Engaging students in service learning or research projects
90.5	78.4	o. Incorporating themes of creativity, innovation or problem solving into coursework
97.3	75.7	p. Integrating new teaching methods and tools into courses
29.7	72.6	q. Teaching in a cross-disciplinary program
32.4	28.4	r. Consulting with other organizations for a fee
4.1	10.8	s. Starting or running a non-consulting business while employed by Metro State
52.7	51.4	t. Serving on organizational boards
50.0	78.4	u. Organizing a conference or an interest group in an academic association
18.9	42.5	v. Lobbying or testifying in one's field of expertise
54.1	55.4	w. Consulting with other organizations on a pro bono basis
63.5	64.9	x. Engaging in service / public engagement activities with community groups
43.2	33.8	y. Earned a supplemental income outside of your college salary, from sources closely related to your area of professional expertise
---	---	z. Other - please specify here:

3. In your opinion, how should Metro State reward faculty for innovative activities?
(Check All That Apply)

N=85

- 83.5% ___ Salary increases
- 71.8% ___ Promotions
- 80.0% ___ Considered in tenure decision
- 72.9% ___ Reduced course load (reassigned time)
- 60.0% ___ More research support
- 51.8% ___ More teaching support
- 9.4% ___ Other (please describe)

4. How would you describe the culture of Metro State? Circle the number for each pair that best describes your opinion.

4.74	Enterprising	...	1	2	3	4	5	6	7	...	Traditional
4.50	Innovative	...	1	2	3	4	5	6	7	...	Imitative
3.14	Reactive	...	1	2	3	4	5	6	7	...	Proactive
4.34	Dynamic	...	1	2	3	4	5	6	7	...	Inactive
4.51	Progressive	...	1	2	3	4	5	6	7	...	Conservative
2.22	Bureaucratic	...	1	2	3	4	5	6	7	...	Flexible

5. In your opinion, how has Metro State treated creativity by its Faculty?

3.44 Stifles creativity 1 2 3 4 5 6 7 Promotes creativity

6. In your efforts to be more innovative at Metro State, have you encountered any barriers that have impeded your innovative activities?

- 33.8% ___ No; skip to Question 7
- 66.2% ___ Yes; continue to Question 6b below.

6b) If you answered "YES" above, please describe the barriers that you have faced in the space provided below:

7. If Metro State were to provide learning opportunities that are aimed at assisting faculty in being more innovative, would you be interested in participating?

21.1% ___ No; skip to Question 8

78.9% ___ Yes; continue to Question 7b below.

7b) If you answered “YES” above, which format of learning opportunities below would suit your needs? (Check All That Apply)

62.2% ___ Multiple short workshop sessions (1 to 1½ hours)

43.2% ___ Half-day workshop

18.9% ___ Full-day workshop

17.6% ___ Multi-week training course

27.0% ___ Day conferences

16.2% ___ Weekend conferences

32.4% ___ Online courses

9.5% ___ Other (please list: _____)

7c) Which of the following learning opportunity topics will you be interested in:
(Check All That Apply)

21.6% ___ Intellectual property and technology transfer for the academic researcher

14.9% ___ Industry collaboration for the academic researcher

27.0% ___ Community leadership

35.1% ___ Grant writing

58.1% ___ Incorporating creativity, innovation, or problem solving in the classroom

5.4% ___ Writing a business plan

5.4% ___ Creating and managing a small business or organization

9.5% ___ Career management and development

8.1% ___ Non-faculty career alternatives

9.5% ___ Other, please specify here: _____

8. In your opinion, which of the following innovative learning opportunities should be made available for students? (Check All That Apply)

28.0% ___ Intellectual property management for students

61.3% ___ Industry collaboration for students

68.0% ___ Self-employment skills

56.0% ___ Writing a business plan

49.3% ___ Creating and managing a small business or organization

61.3% ___ Community leadership

68.0% ___ Career Management and Development

49.3% ___ Managing a career innovatively

9.3% ___ Other, please specify here: _____

Classification Information

Please provide the following information for classification purposes. Remember, all of your responses are confidential, and data will only be analyzed in group form.

a. What is your MSCD Employment Status?

- 69.4% ___ Tenured
- 28.2% ___ Tenure-track
- 2.4% ___ Full Time Temporary
- 0.0% ___ Adjunct (part time)

b. Are you a(n)

- 1.2% ___ Administrator
- 2.4% ___ Instructor
- 27.4% ___ Assistant Professor
- 31.0% ___ Associate Professor
- 36.9% ___ Full Professor
- 1.2% ___ Other (specify: _____)

c. Have you ever held a full-time position in a non-academic environment?

- 24.7% ___ No – skip to (d)
- 75.3% ___ Yes – continue

If “YES”, how many years?

\bar{x} = 14.3 years non-academic experience

d. Have you received special recognitions in the last five years for: (check all that apply)

- 42.4% ___ Teaching
- 24.7% ___ Research / Scholarship
- 27.1% ___ Service
- 7.1% ___ Other
(specify: _____)

e. How many years have you been working at Metro State?

\bar{x} = 11.6 years

f. In which school is your primary affiliation?

- 49.4% ___ LAS (n1=281)
- 19.3% ___ BUS (n2=66)
- 31.3% ___ SPS (n3=94)

(i) Which department(s)? (list all if multiple in the space provided below)

g. Gender: 43.0% ___ Female
47.0% ___ Male

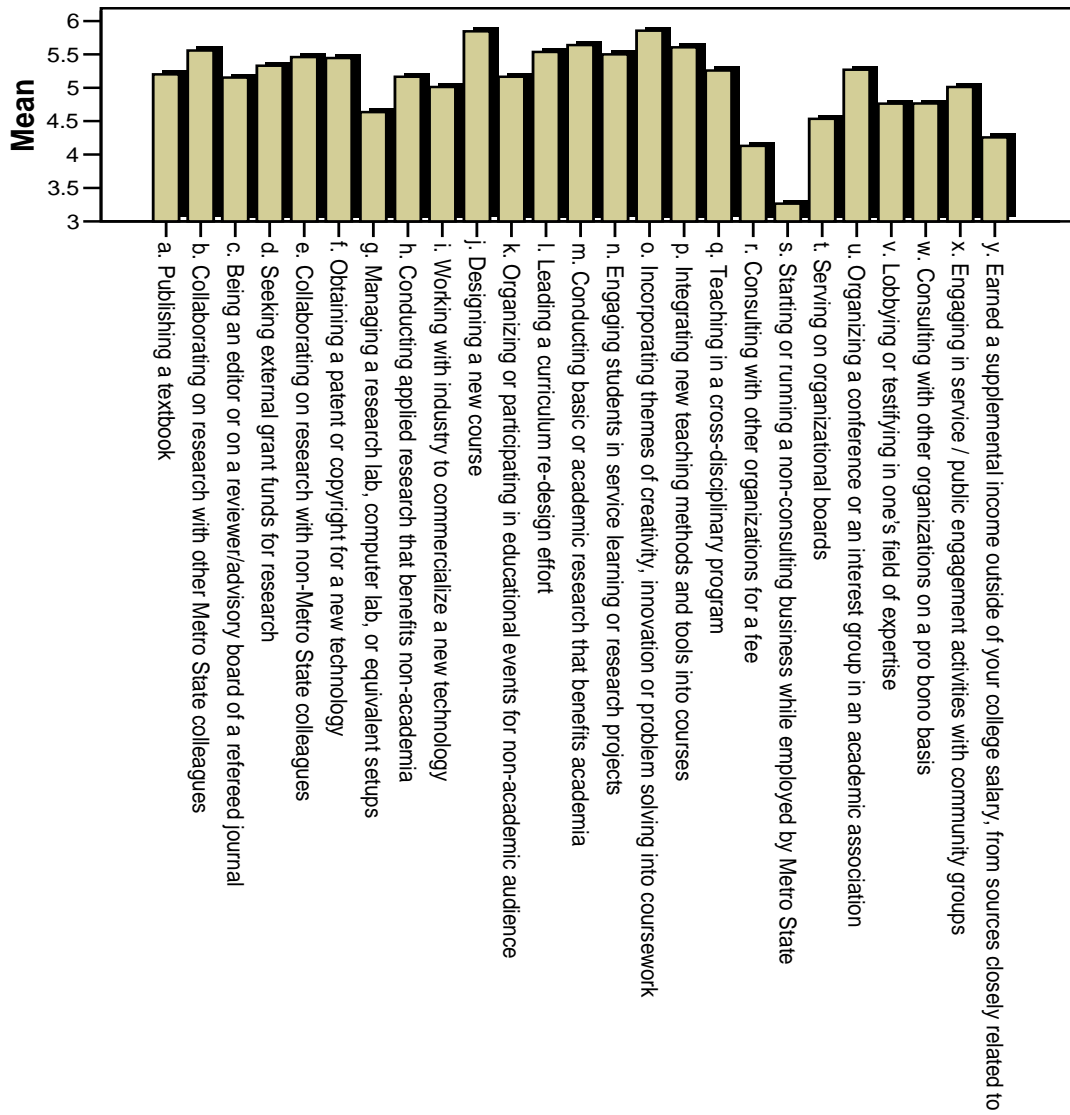
h. Age: 0.0% ___ 25 or younger
2.6% ___ 26-35
24.4% ___ 36-45
28.2% ___ 46-55
37.2% ___ 56-65
7.7% ___ 66 or higher

i. Ethnic background:

- 2.7% ___ African American
- 4.0% ___ Asian or Pacific Islander
- 82.7% ___ Caucasian
- 5.3% ___ Hispanic/Latino(a)
- 0.0% ___ Native American
- 5.3% ___ Other

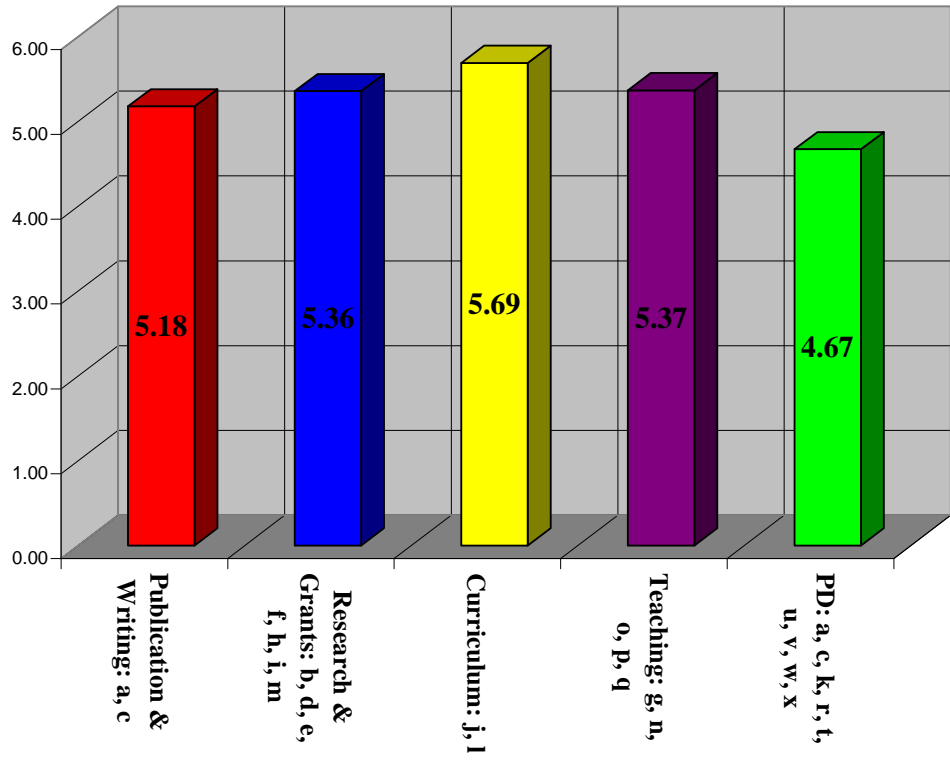
THANK YOU very much for participating in this survey.

Q1. How beneficial or detrimental do you consider the following activities in describing “innovative faculty”?

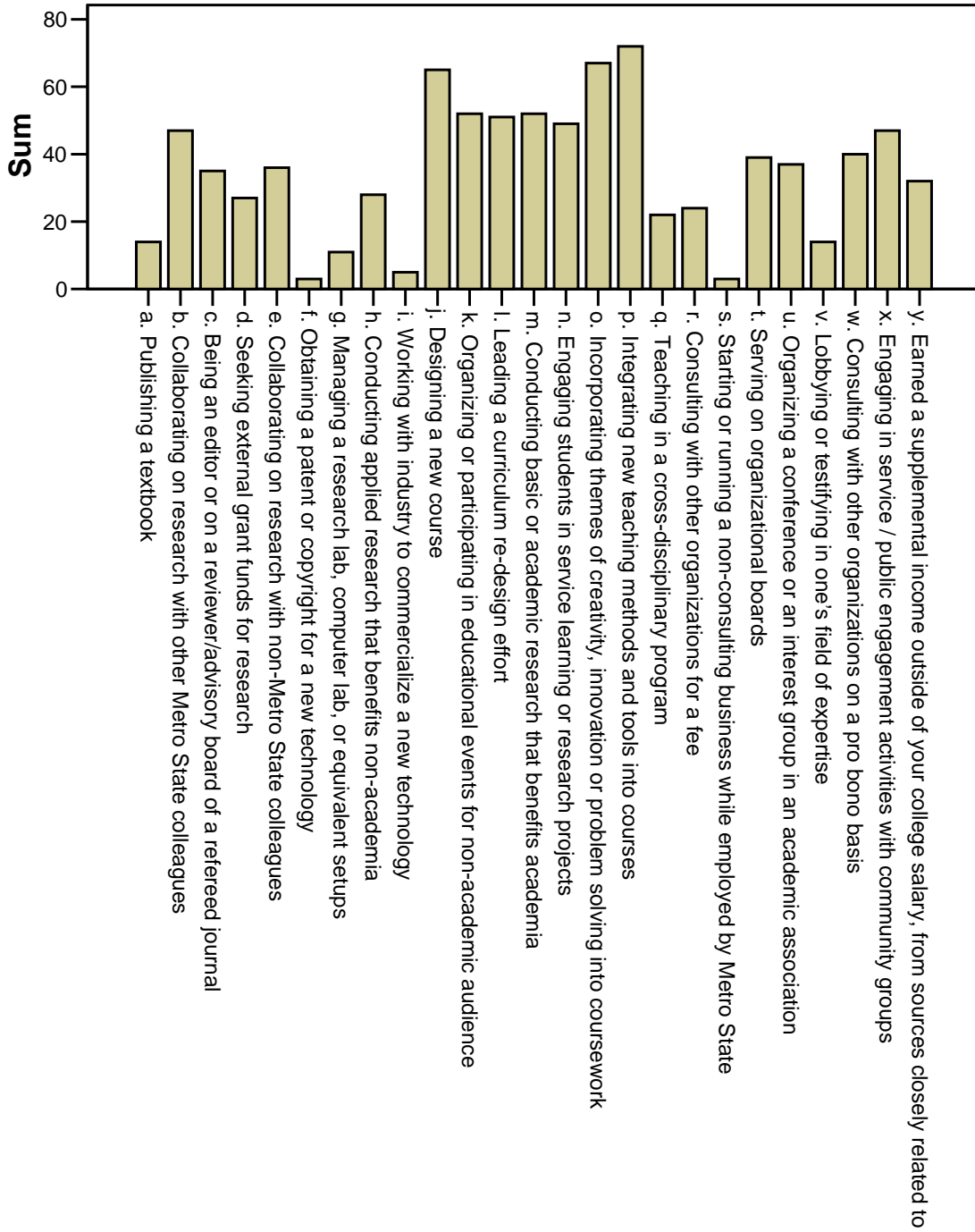


Q1

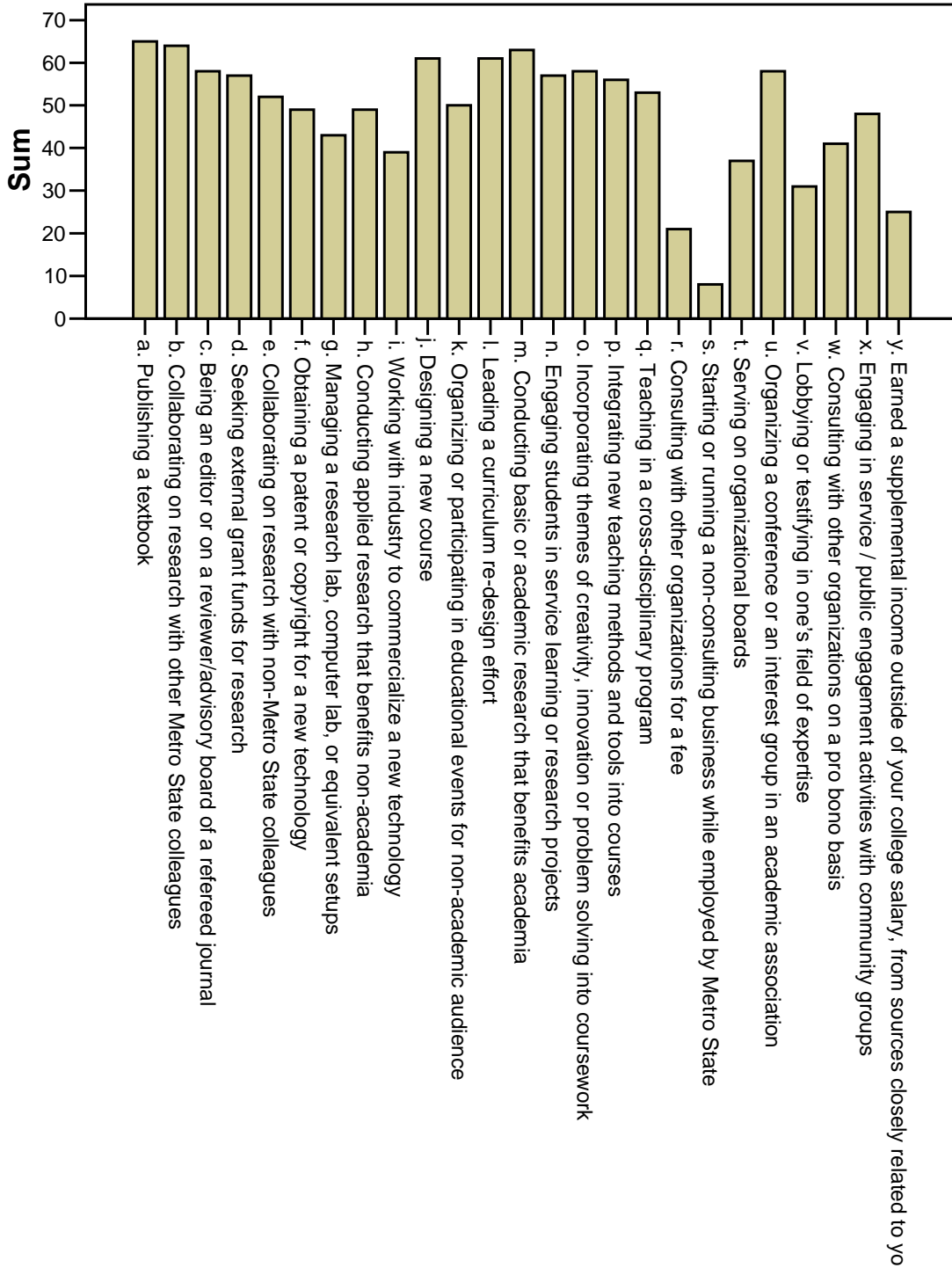
Types of Choices



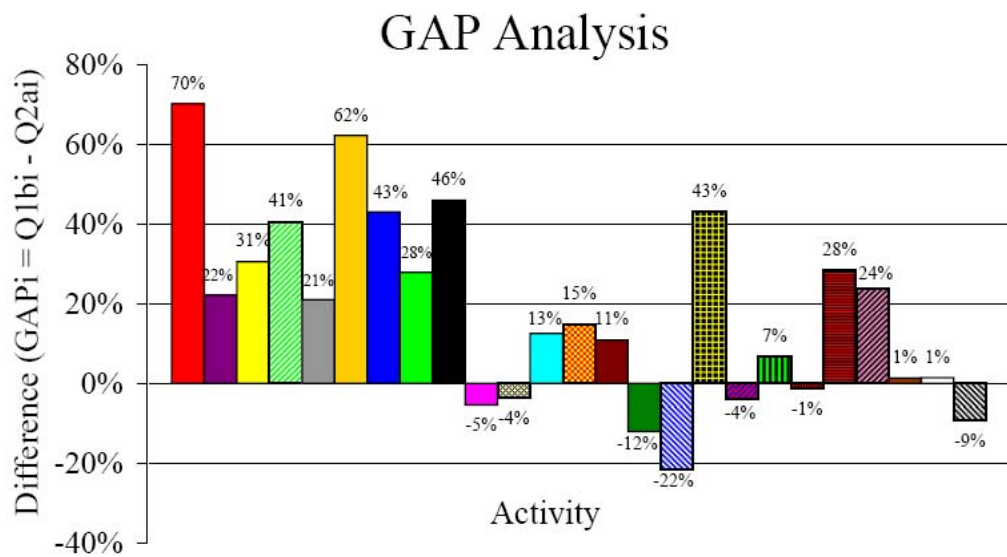
Q2a. In the last 3 years, which of the following activities have you engaged in?



Q2b. Regardless whether or not you have engaged in each activity, in your opinion, should Metro State reward faculty for their engagement with such activity?

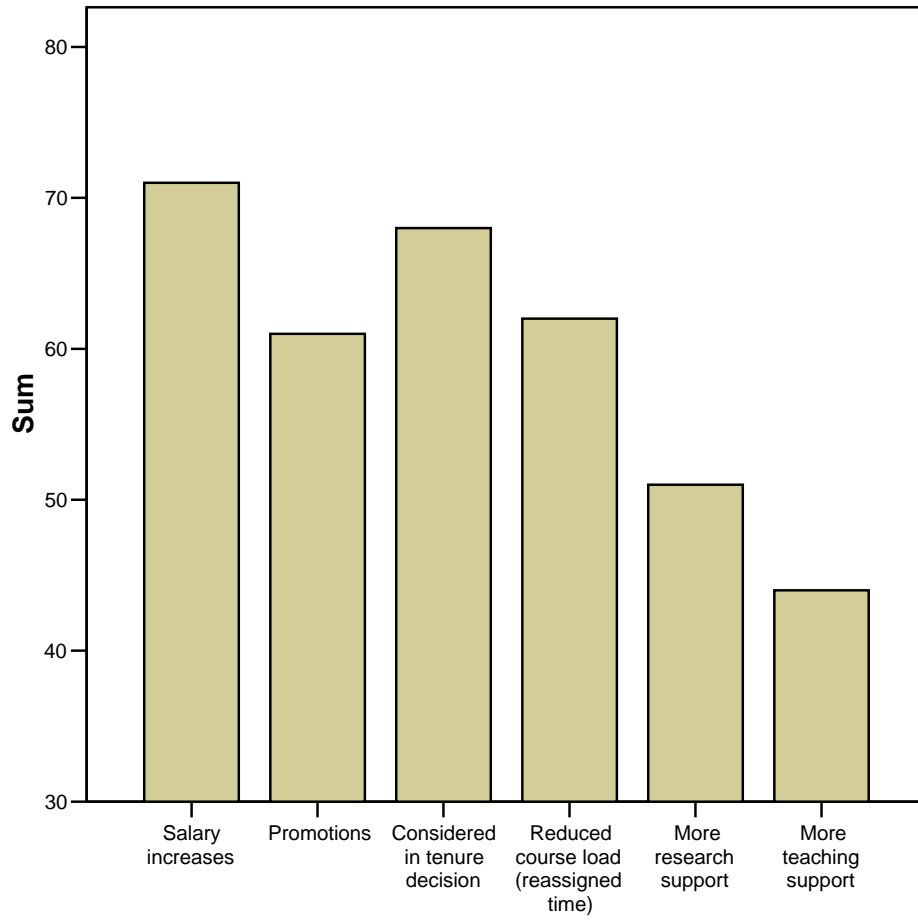


Q2. Gap Analysis: Gap=Q2a minus Q2b

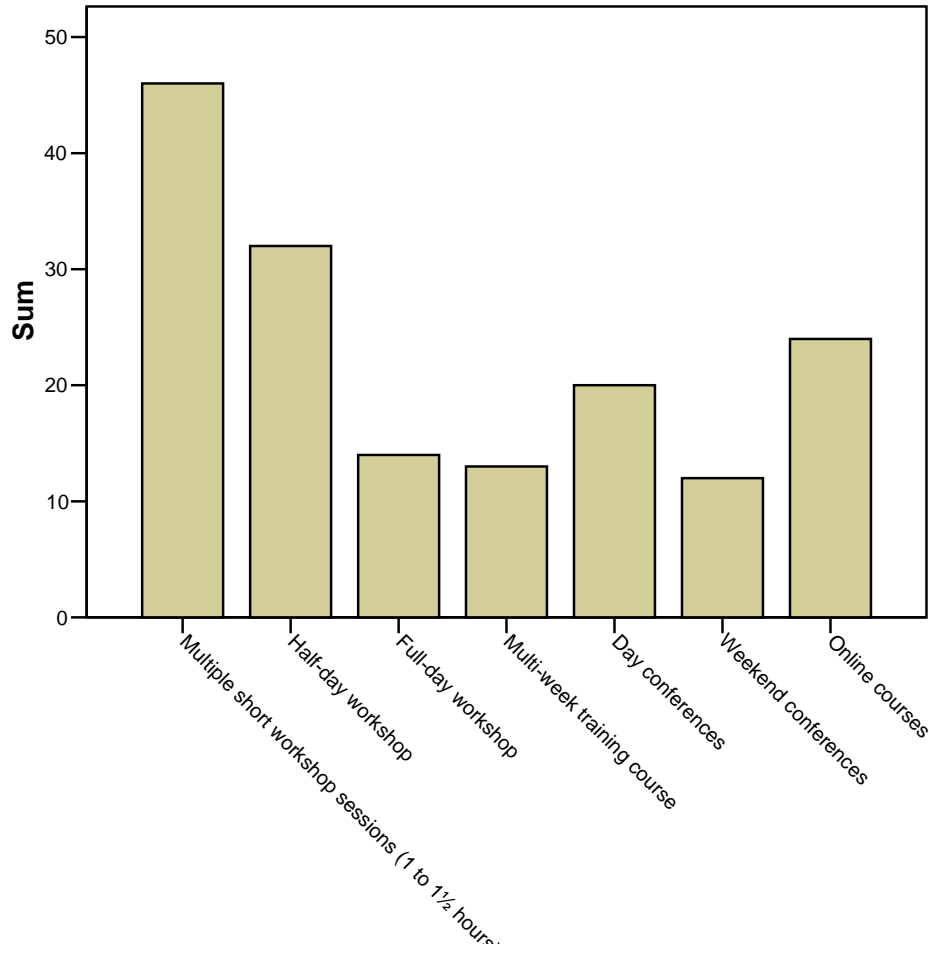


- a. Publishing a textbook
- b. Collaborating on research with other Metro State colleagues
- c. Being an editor or on a reviewer/advisory board of a refereed journal
- d. Seeking external grant funds for research
- e. Collaborating on research with non-Metro State colleagues
- f. Obtaining a patent or copyright for a new technology
- g. Managing a research lab, computer lab, or equivalent setups
- h. Conducting applied research that benefits non-academia
- i. Working with industry to commercialize a new technology
- j. Designing a new course
- k. Organizing or participating in educational events for non-academic audience
- l. Leading a curriculum re-design effort
- m. Conducting basic or academic research that benefits academia
- n. Engaging students in service learning or research projects
- o. Incorporating themes of creativity, innovation or problem solving into coursework
- p. Integrating new teaching methods and tools into courses
- q. Teaching in a cross-disciplinary program
- r. Consulting with other organizations for a fee
- s. Starting or running a non-consulting business while employed by Metro State
- t. Serving on organizational boards
- u. Organizing a conference or an interest group in an academic association
- v. Lobbying or testifying in one's field of expertise
- w. Consulting with other organizations on a pro bono basis
- x. Engaging in service / public engagement activities with community groups
- y. Earned a supplemental income outside of your college salary, from sources related to your area of professional expertise

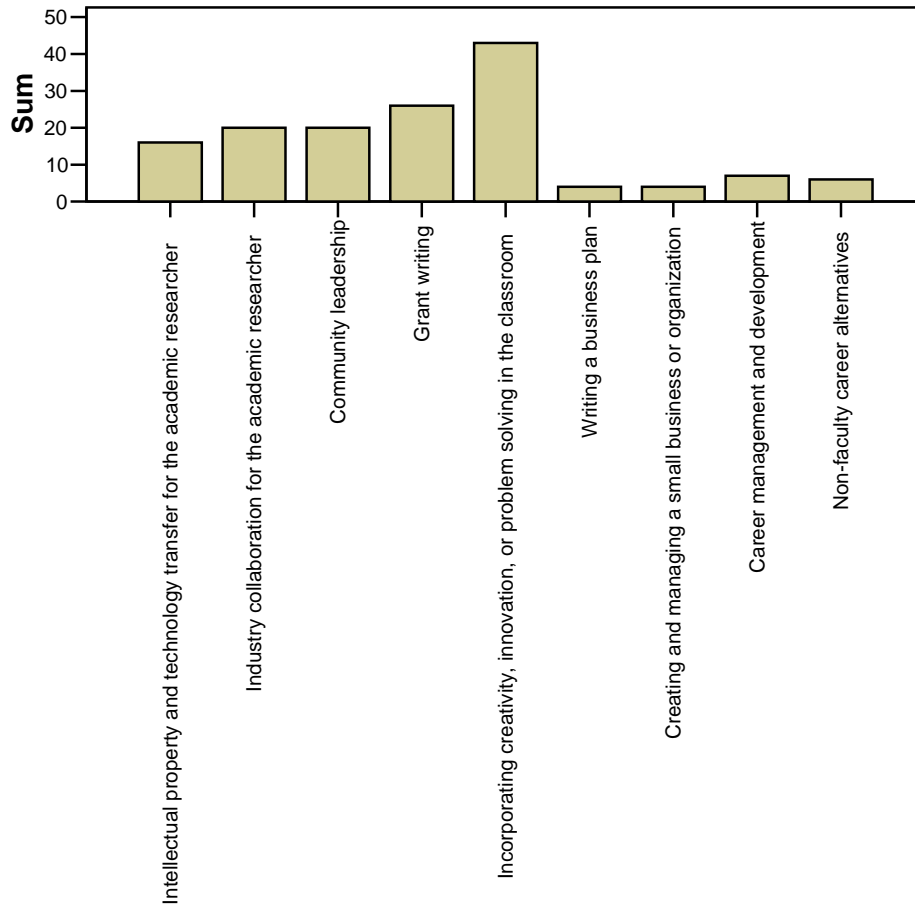
Q3. In your opinion, how should Metro State reward faculty for innovative activities?



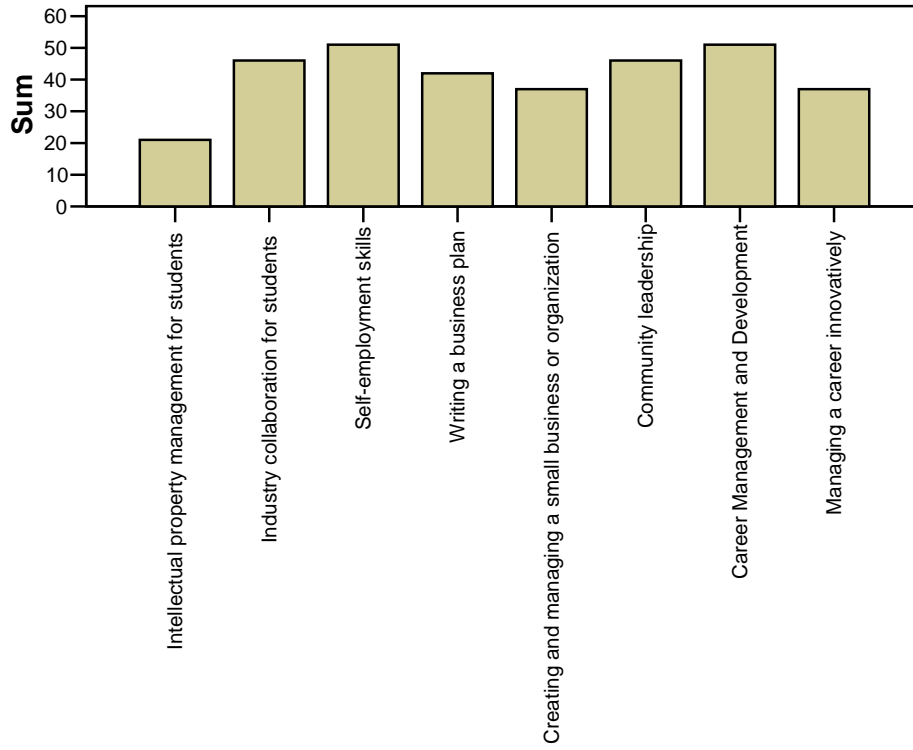
Q7a. Which format of learning opportunities below would suit your needs?



Q7b. Which of the following learning opportunity topics will you be interested in:

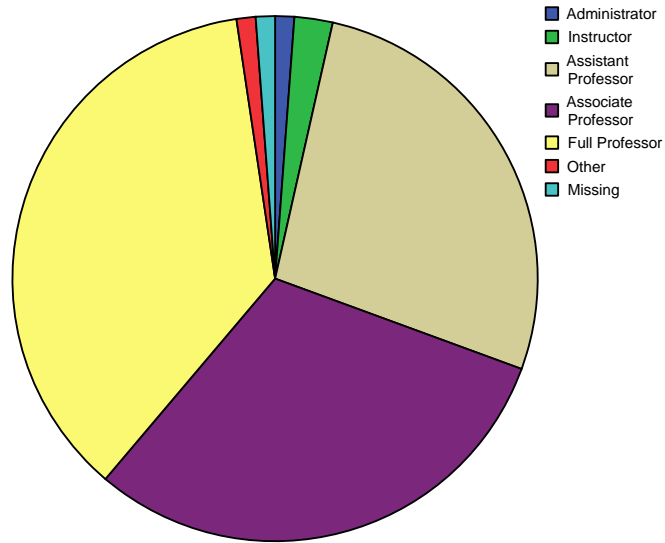


Q8. In your opinion, which of the following innovative learning opportunities should be made available for students?

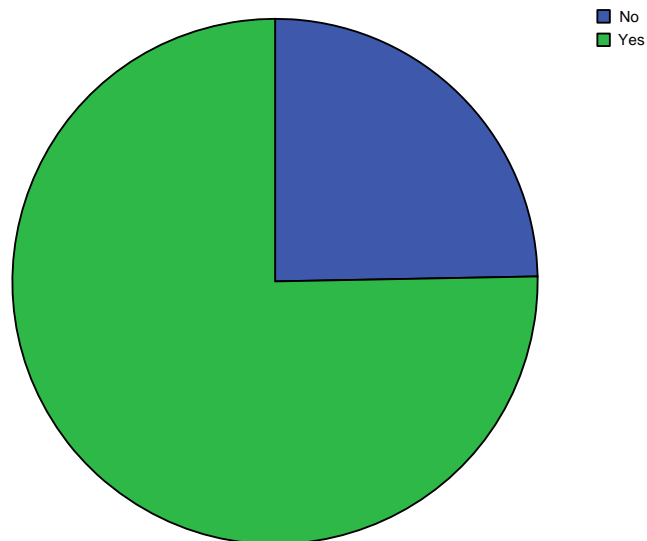


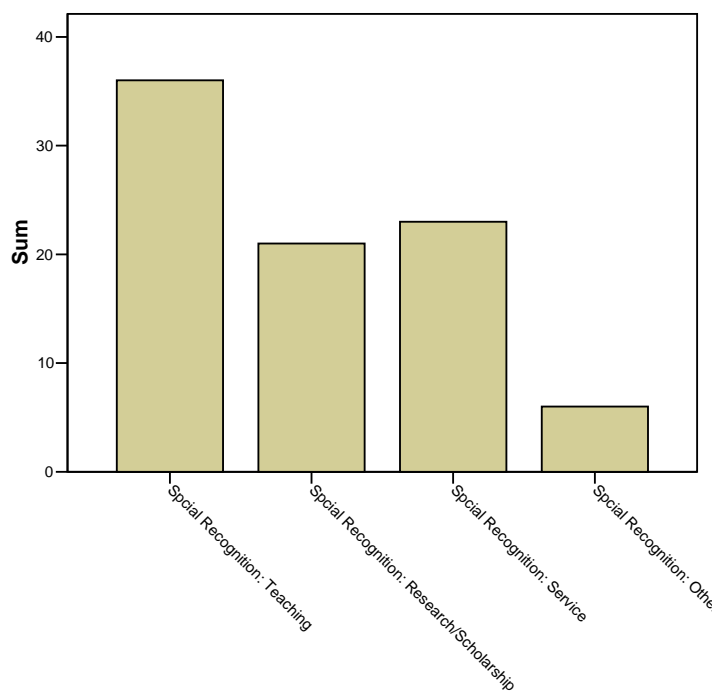
Participant Classification Information:

(i) Are you a(n)

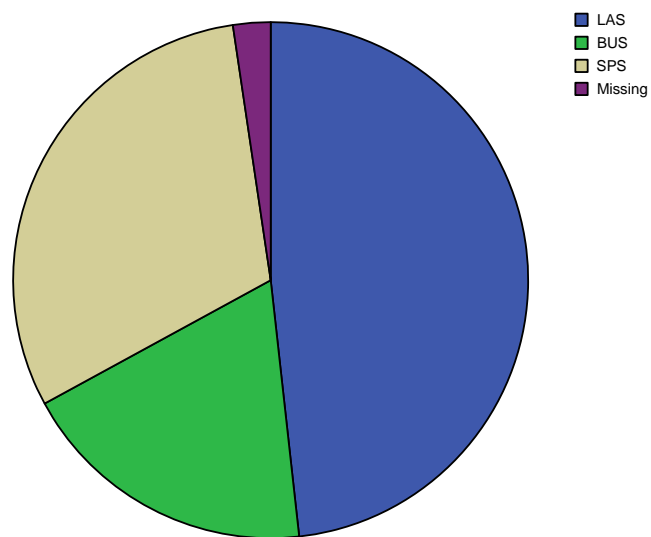


c. Have you ever held a full-time position in a non-academic environment?

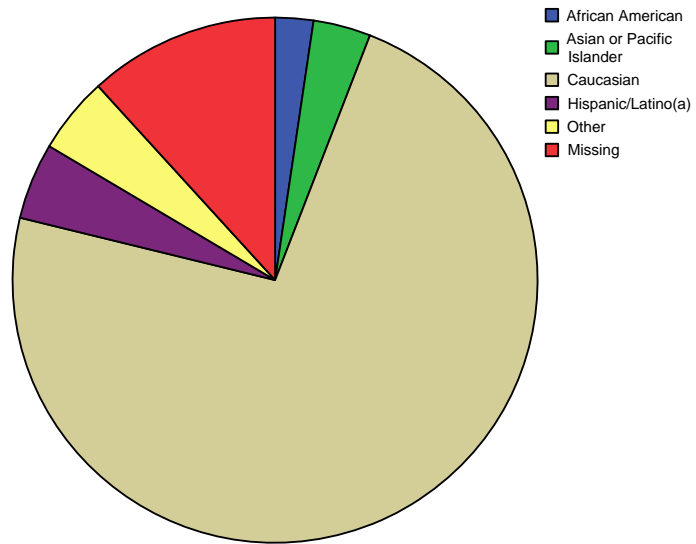




f. In which school is your primary affiliation?



i. Ethnic background:



Appendix B:

Q6b

Barriers that have impeded Faculty's Innovative Activities at Metro

Q6b. If you answered “YES” above, please describe the barriers that you have faced

1. *The foundation office (major barrier) there need to be a redesign of how faculty needs to get access to the money they generate. The foundation is not helpful and loud rather how it not bother, then I do whatever I can to avoid them.*
2. *Quit micro managing them*
3. *Time, money*
4. *Insufficient funding. Top heavy directives limiting development of creation ideas.*
5. *Funding withdrawn. Not considered in retention/tenure decisions. Work load too high to have time to be innovative. Guidelines on clear relating to both procedures and available support.*
6. *Fear, tradition, lack of knowledge- it is not the Metro way.*
7. *Purchasing is very difficult, especially w/ grant funds. Office of sponsored programs is hostile and punitive, also incompetent.*
8. *Difficult process on getting grants... who is able to talk to who (admin and/or faculty)*
9. *No support for seeking-terminal degree. Very very low support for PD activities peer schools have 10-20 times the funding. Facilities lacking including classrooms and labs. Limited or no release time.*
10. *Re tangible resources-there are few available.*
11. *Jealousy on the part of non-... faculty Skimpy PD ... Bureaucratic ... and administrative time wasting. Too much emphasis on admin. Such as "formal" advising and PTR.*
12. *Department politics-i.e., the "good-ol-folks" club keeping newer faculty from innovating because they wish to keep all perks for themselves and feeling threatened by new ideas.*
13. *Lack of time, labs should count as actual hours. They are more difficult to teach than a lecture class. Require much more time. I make up most of my materials including 80% of lab materials.*
14. *Former dean of LAS was major woodblock because she favored specific faculty and departments, was very punitive in retaliation and then she gets promoted. This caused an atmosphere of not caring about new ideas or delivery system.*
15. *A static bureaucracy that fails to reward, micro manages, intimidates generally fasters on attitude of quietly go along.*
16. *Team teaching virtually impossible*
17. *Reluctance to commit resources for a proposed, inter disciplinary new minor*
18. *As a chair, the quantity of paperwork takes time away from acting on innovative activities*
19. *Lack of time and financial support. College curriculum committee*
20. *Inherited bureaucratic ways of doing things. Suspicion that reassigned time is a "vacation" and is being squandered*
21. *Without space for student/faculty research labs and money for equipment and time to pursue projects, innovation will not happen. I published two professional paper just this spring with an undergraduate student. I have numerous other research projects that could include students. But, our department didn't get any space in the science building extension. Nor, do we know if we will get any expanded space in the north classroom once the science building is completed. If we had space and time funding would follow.*
22. *Salary moratorium that extended into 2 fiscal years , weak HR staff, terrible LAS budget staff. If this university was run like a business, these people would be fired on the spot. And No clear guidelines on research remuneration*
23. *The politics of tenure has stifled ideas as well as concerns over things I see. As wrong retaliation is alive and will on this campus and bringing forth new ideas can get black balled quickly.*
24. *Cross discipline courses, particularly from one school to another, almost impossible to pull off FTE problem.*
25. *Colleagues in teacher education who both passively and actively resisted pushed to rethink our teacher prep. Program as a whole.*
26. *The students-most are unprepared for creativity, student yesterday said out loud in my class " all I want to do is go home and go to bed"*
27. *The provost (past and present) has often had a more limited view of bring innovative. In earlier years I was punished for bring innovative, acquiring grants, etc... because the belief was all faculty should be treated the same... even though I brought in money I was not allowed to benefit financially without a big struggle to get approval.*
28. *Chairs Admin and colleagues doubt the value of such work or block it through passive aggressive inaction.*
29. *The process is slow and too may "heads" to get through to get new innovative projects . Barrier at curriculum and jealousy of some faculty/admin has innovation. If seem to threat! Those who can't or won't work that " extra..." ... fun, energy happen here.*
30. *Not a lot of support from administrators*
31. *think floor - provoke Dean office accounting procedures work load- lack of time*
32. *inertia, loopholes to downgrade and lowercase activity - not to have credit for innovative venture.*
33. *Too little time because too much time is spent teaching/grading papers, etc.*
34. *Lack of time to satisfy contract for book publication*
35. *Lack of communication between departments, collaboration, fellowship*

36. *Dean does not recognize teaching conferences*
37. *Insufficient time too much bureaucracy to overcome*
38. *Administration*
39. *Time a culture that ... access to sabbaticals (only 3 given last year)*
40. *Heavy teaching load morning and night schedules, forced to do online courses weak "students" time consuming and not comparative to traditional course.*
41. *Lack of time due to required activities lack of support in department*
42. *Teaching loads and committee activities interfere with innovation*
43. *College infrastructure was not designed with innovation in mind. State regulations often squash innovative ideas.*
44. *-funding*
45. *Intertexture Property policy*
46. *Lack of space for interchange and ... with colleagues*
47. *Heavy course load, low pay which leads to outside projects for pay) leaves little time for innovation.*
48. *Low percent funding, especially if it involves technology. High teaching loads to try to bring about innovative aspects.*
49. *No decrease in teaching lead, advising load, service load lead to work load to do innovative work is the biggest problem. We are being expected to function much like faculty at research institutions while teaching 4-8 times the teaching load.*
50. *Lost reassigned time to direct the center for addictive studies*
51. *As with any human-managed institution, there is an attitude of complacency and satisfaction with the status quo. I don't feel such attitudes are any stronger here than at other academic institutions... but they are still barriers*
52. *-Release time for research & development of a new major*
53. *-Pay not commensurate B*
54. *Lack of leadership in administration in resolving hot button issue between LAS and TED. (Dean and chairs level has improved marvelous in the last few years.)*
55. *Also, there is a layer of admin. Busy work that impedes my two ... in designing new courses to meeting tenure decisions*
56. *Capable faculty are punished with overloads. Provost refuses to provide written policies on reassigned time, stipends, guidelines for counting teaching loads, etc.*
57. *Any attempt at creatively will be stifled by a climate of suspicion, treated by the Provost as "corruption" and subjected to absurd requirements for paperwork. Creative faculty leave the college more often than the dull and conservative and more.*
58. *Teaching load too high for expectation of PD. Too much need for committee work, should be more time for PD, not admin work. Little to no faculty development, salaries and benefits not keeping pace w/ peers and same raises for non-performers.*
59. *Re intangibles- faculty are asked to "march" in too many directions at once; e.g. staff 2+2 take advantage of PD opportunities, plus increase number of tenured/ tenure track faculty in General Studies courses in addition to the paper work headaches of reports, reviews, etc*
60. *Not enough time, too much time spent on mindless paperwork. Too high of teaching load-partly do to older faculty hoarding the low-enrolled upper level courses.*
61. *No support for research and P.D time, money, intrinsic rewards, those who won't do it "rewarded" same as those who do*

Appendix C:
Survey Questionnaire

The 2007 Center for Innovation Survey

Instructions: Please circle or check the appropriate box that best describes your true opinion for the following questions. There is no right or wrong answer. Your responses will be kept strictly confidential. Only aggregate results will be analyzed and reported.

1. Numerous definitions exist for “innovative faculty.” How beneficial or detrimental do you consider the following activities in describing “innovative faculty”?

<i>How important the following are in describing “innovative faculty”?</i>	Very Detrimental				Very Beneficial			
aa. Publishing a textbook	1	2	3	4	5	6	7	
bb. Collaborating on research with other Metro State colleagues	1	2	3	4	5	6	7	
cc. Being an editor or on a reviewer/advisory board of a refereed journal	1	2	3	4	5	6	7	
dd. Seeking external grant funds for research	1	2	3	4	5	6	7	
ee. Collaborating on research with non-Metro State colleagues	1	2	3	4	5	6	7	
ff. Obtaining a patent or copyright for a new technology	1	2	3	4	5	6	7	
gg. Managing a research lab, computer lab, or equivalent setups	1	2	3	4	5	6	7	
hh. Conducting applied research that benefits non-academia	1	2	3	4	5	6	7	
ii. Working with industry to commercialize a new technology	1	2	3	4	5	6	7	
jj. Designing a new course	1	2	3	4	5	6	7	
kk. Organizing or participating in educational events for non-academic audience	1	2	3	4	5	6	7	
ll. Leading a curriculum re-design effort	1	2	3	4	5	6	7	
mm. Conducting basic or academic research that benefits academia						6	7	
nn. Engaging students in service learning or research projects	1	2	3	4	5	6	7	
oo. Incorporating themes of creativity, innovation or problem solving into coursework	1	2	3	4	5	6	7	
pp. Integrating new teaching methods and tools into courses	1	2	3	4	5	6	7	
qq. Teaching in a cross-disciplinary program	1	2	3	4	5	6	7	
rr. Consulting with other organizations for a fee	1	2	3	4	5	6	7	
ss. Starting or running a non-consulting business while employed by Metro State	1	2	3	4	5	6	7	
tt. Serving on organizational boards	1	2	3	4	5	6	7	
uu. Organizing a conference or an interest group in an academic association	1	2	3	4	5	6	7	
vv. Lobbying or testifying in one’s field of expertise	1	2	3	4	5	6	7	
ww. Consulting with other organizations on a pro bono basis	1	2	3	4	5	6	7	
xx. Engaging in service / public engagement activities with community groups	1	2	3	4	5	6	7	
yy. Earned a supplemental income outside of your college salary, from sources closely related to your area of professional expertise	1	2	3	4	5	6	7	
zz. Other - please specify here:	1	2	3	4	5	6	7	

2. The following is a list of innovative activities. (a) In the last 3 years, which of the following activities have you engaged in? (b) Regardless whether or not you have engaged in each activity, in your opinion, should Metro State reward faculty for their engagement with such activity?

Engaged in last 3 years (Circle One)		Metro should reward (Circle One)		Activities:
Yes	No	Yes	No	a. Publishing a textbook
Yes	No	Yes	No	b. Collaborating on research with other Metro State colleagues
Yes	No	Yes	No	c. Being an editor or on a reviewer/advisory board of a refereed journal
Yes	No	Yes	No	d. Seeking external grant funds for research
Yes	No	Yes	No	e. Collaborating on research with non-Metro State colleagues
Yes	No	Yes	No	f. Obtaining a patent or copyright for a new technology
Yes	No	Yes	No	g. Managing a research lab, computer lab, or equivalent setups
Yes	No	Yes	No	h. Conducting applied research that benefits non-academia
Yes	No	Yes	No	i. Working with industry to commercialize a new technology
Yes	No	Yes	No	j. Designing a new course
Yes	No	Yes	No	k. Organizing or participating in educational events for non-academic audience
Yes	No	Yes	No	l. Leading a curriculum re-design effort
Yes	No	Yes	No	m. Conducting basic or academic research that benefits academia
Yes	No	Yes	No	n. Engaging students in service learning or research projects
Yes	No	Yes	No	o. Incorporating themes of creativity, innovation or problem solving into coursework
Yes	No	Yes	No	p. Integrating new teaching methods and tools into courses
Yes	No	Yes	No	q. Teaching in a cross-disciplinary program
				r. Consulting with other organizations for a fee
Yes	No	Yes	No	s. Starting or running a non-consulting business while employed by Metro State
Yes	No	Yes	No	t. Serving on organizational boards
Yes	No	Yes	No	u. Organizing a conference or an interest group in an academic association
Yes	No	Yes	No	v. Lobbying or testifying in one's field of expertise
Yes	No	Yes	No	w. Consulting with other organizations on a pro bono basis
Yes	No	Yes	No	x. Engaging in service / public engagement activities with community groups
Yes	No	Yes	No	y. Earned a supplemental income outside of your college salary, from sources closely related to your area of professional expertise
Yes	No	Yes	No	z. Other - please specify here:

4. In your opinion, how should Metro State reward faculty for innovative activities?
(Check All That Apply)

- Salary increases
- Promotions
- Considered in tenure decision
- Reduced course load (reassigned time)
- More research support
- More teaching support
- Other (please describe)

5. How would you describe the culture of Metro State? Circle the number for each pair that best describes your opinion.

Enterprising	...	1	2	3	4	5	6	7	...	Traditional
Innovative	...	1	2	3	4	5	6	7	...	Imitative
Reactive	...	1	2	3	4	5	6	7	...	Proactive
Dynamic	...	1	2	3	4	5	6	7	...	Inactive
Progressive	...	1	2	3	4	5	6	7	...	Conservative
Bureaucratic	...	1	2	3	4	5	6	7	...	Flexible

5. In your opinion, how has Metro State treated creativity by its Faculty?

Stifles creativity 1 2 3 4 5 6 7 Promotes creativity

6. In your efforts to be more innovative at Metro State, have you encountered any barriers that have impeded your innovative activities?

- No; skip to Question 7
- Yes; continue to Question 6b below.

6b) If you answered “YES” above, please describe the barriers that you have faced in the space provided below:

7. If Metro State were to provide learning opportunities that are aimed at assisting faculty in being more innovative, would you be interested in participating?

- No; skip to Question 8
- Yes; continue to Question 7b below.

7b) If you answered "YES" above, which format of learning opportunities below would suit your needs? (Check All That Apply)

- Multiple short workshop sessions (1 to 1½ hours)
- Half-day workshop
- Full-day workshop
- Multi-week training course
- Day conferences
- Weekend conferences
- Online courses
- Other (please list: _____)

7b) Which of the following learning opportunity topics will you be interested in:
(Check All That Apply)

- Intellectual property and technology transfer for the academic researcher
- Industry collaboration for the academic researcher
- Community leadership
- Grant writing
- Incorporating creativity, innovation, or problem solving in the classroom
- Writing a business plan
- Creating and managing a small business or organization
- Career management and development
- Non-faculty career alternatives
- Other, please specify here: _____

8. In your opinion, which of the following innovative learning opportunities should be made available for students? (Check All That Apply)

- Intellectual property management for students
- Industry collaboration for students
- Self-employment skills
- Writing a business plan
- Creating and managing a small business or organization
- Community leadership
- Career Management and Development
- Managing a career innovatively
- Other, please specify here: _____

Classification Information

Please provide the following information for classification purposes. Remember, all of your responses are confidential, and data will only be analyzed in group form.

a. What is your MSCD Employment Status?

- Tenured
- Tenure-track
- Full Time Temporary
- Adjunct (part time)

(i) Are you a(n)

- Administrator
- Instructor
- Assistant Professor
- Associate Professor
- Full Professor
- Other (specify: _____)

c. Have you ever held a full-time position in a non-academic environment?

- No – skip to (d)
- Yes – continue

If “YES”, how many years?

_____ years non-academic experience

d. Have you received special recognitions in the last five years for: (check all that apply)

- Teaching
- Research / Scholarship
- Service
- Other (specify: _____)

e. How many years have you been working at Metro State?

_____ years

f. In which school is your primary affiliation?

- LAS
- BUS
- SPS

(i) Which department(s)? (list all if multiple in the space provided below)

g. Gender: Female
 Male

h. Age: 25 or younger
 26-35
 36-45
 46-55
 56-65
 66 or higher

i. Ethnic background:

- African American
- Asian or Pacific Islander
- Caucasian
- Hispanic/Latino(a)
- Native American
- Other

THANK YOU very much for participating in this survey.

Appendix D :
Original CI/UI Questionnaire

ON-LINE ENTREPRENURIAL FACULTY SURVEY

The Metropolitan State College of Denver Center for Innovation

1) Numerous definitions exist for “entrepreneurial faculty.” On a scale of 1 to 5, where 1 equals “Not at all important” and 5 equals “Extremely important,” how important do you consider the following activities in describing “entrepreneurial faculty”?

- 1 Not at all important
- 2 Not too important
- 3 Important
- 4 Very important
- 5 Extremely important

- ___ Publishing a textbook
- ___ Collaborating on research with other colleagues at the college
- ___ Editing a journal
- ___ Seeking grant funds for research
- ___ Collaborating on research with people in other organizations
- ___ Obtaining a patent or copyright for a new technology
- ___ Managing a research lab or group
- ___ Conducting applied research
- ___ Working with industry to commercialize a technology
- ___ Designing a new course
- ___ Organizing or participating in educational events for a non-university audience
- ___ Leading a curriculum re-design effort
- ___ Engaging students in service learning projects
- ___ Incorporating themes of creativity, innovation or problem solving into coursework
- ___ Integrating new teaching methods and tools into courses
- ___ Teaching in a cross-disciplinary program
- ___ Consulting with other organizations for a fee
- ___ Starting a business while maintaining university status
- ___ Serving on organizational boards
- ___ Organizing a conference
- ___ Lobbying or testifying in one’s field of expertise

- Consulting with other organizations on a pro bono basis
- Organizing a new interest group in an academic association
- Managing your career in a self-reliant, multi-faceted fashion
- Engaging in service / public engagement activities with community groups

2) Please rate the strength of the entrepreneurial behavior of a faculty member based on this scenario: A professor has developed software that helps with data modeling and analysis in geography. A disclosure is filed with the College Office of Technology Management, and copyright protection is registered.

- Not at all entrepreneurial
- Not too entrepreneurial
- Entrepreneurial
- Very entrepreneurial
- Extremely entrepreneurial

3) Please rate the strength of the entrepreneurial behavior of a faculty member based on this scenario: Two professors, one in marketing and one in music, decide to develop and team-teach a course in music promotion. The goal of the course is to provide both business and music students with knowledge and experience in how to organize a concert.

- Not at all entrepreneurial
- Not too entrepreneurial
- Entrepreneurial
- Very entrepreneurial
- Extremely entrepreneurial

4) Please rate the strength of the entrepreneurial behavior of a faculty member based on this scenario: A faculty member has won numerous teaching and mentoring or advising awards, including selection as a Carnegie Scholar by the Carnegie Foundation for the Advancement of Teaching. The Scholars are expected to investigate and document significant issues in teaching and learning within their disciplines.

- Not at all entrepreneurial
- Not too entrepreneurial
- Entrepreneurial
- Very entrepreneurial
- Extremely entrepreneurial

5) Please rate the strength of the entrepreneurial behavior of a faculty member based on this scenario: Capitalizing on the success of the TV series, a botany professor decides to write a book, "Being a Survivor." The book details how to find and use edible and medicinal plants.

- Not at all entrepreneurial
- Not too entrepreneurial
- Entrepreneurial
- Very entrepreneurial
- Extremely entrepreneurial

6) How often do you...

- 1 Never
- 2 Rarely
- 3 Sometimes
- 4 Often
- 5 Always

- Collaborate on research with other colleagues at the College
- Publish a textbook
- Seek grant funds for research
- Collaborate on research with people in other organizations
- Conduct applied research
- Design a new course
- Organize or participate in educational events for a non-college audience
- Engage students in service learning projects
- Incorporate themes of creativity, innovation or problem solving into coursework
- Integrate new teaching methods and tools into courses
- Teach in a cross-disciplinary program
- Consult with other organizations for a fee
- Serve on organizational boards
- Lobby or testify in your field of expertise
- Consult with other organizations on a pro bono basis
- Manage your career in a self-reliant, multi-faceted fashion
- Engage in service / public engagement activities with community groups
- Other (please describe below)

7) In the last three years, have you... (mark all that apply)

- Patented or copyrighted a new technology
- Started a business
- Worked with industry to commercialize a technology
- Managed a research lab or group
- Led a curriculum re-design effort
- Edited a journal
- Organized a conference
- Organized a new interest group in an academic association
- Earned an income outside of your college salary, related to your area of professional expertise
- Other (please describe below)

8a) Do you believe Metro State should reward faculty for entrepreneurial activities?

- Yes
- No

8b) If yes: How should they be rewarded? (mark all that apply)

- Salary increases
- Promotions
- Considered in tenure decision
- Reduced course load (reassigned time)
- More research support
- More teaching support
- Other (please describe)

9) How would you describe the culture of Metro State? Would you say it is . . .

- Enterprising
- Innovative
- Traditional
- Forward thinking
- Dynamic
- Progressive
- Bureaucratic
- Other (please describe)

10) Of the attributes listed in question 9, which two do you believe best describe the culture of Metro State? (select two)

- Enterprising
- Innovative
- Traditional
- Forward thinking
- Dynamic
- Progressive
- Bureaucratic
- Other (described above)

11) Do you believe Metro State encourages its Faculty to be creative, stifles its Faculty's creativity, or has no impact on its Faculty's creativity? (select one)

- Promotes creativity
- Stifles creativity
- Has little or no impact on creativity

12a) In your efforts to be more innovative at Metro State, have you encountered any barriers that have impeded your activities?

- Yes
- No

12b) If YES, what types of barriers have you faced?

Part II. Learning Opportunities

13a) Would you be interested in learning opportunities that are aimed at assisting faculty in being more entrepreneurial?

- Yes
- No

13b) IF YES, what format would best suit your interest? Would you be interested in participating in.. (select all that apply)

- Multiple short workshop sessions (1 to 1½ hours)
- Half-day workshop
- Full-day workshop
- Multi-week training course
- Day conferences
- Weekend conferences
- Online courses
- Other (please describe)

14) I would be interested in learning opportunities in the following topic areas:
(mark all that apply)

- Intellectual property and technology transfer for the academic researcher
- Industry collaboration for the academic researcher
- Community leadership
- Grant writing
- Incorporating creativity, innovation, problem solving in the classroom
- Writing a business plan
- Creating and managing a small organization
- Career development for new faculty
- Career development for mid-level faculty
- Career development for senior faculty
- Other (please describe)

15) I believe the following entrepreneurial learning opportunities should be available for my students: (mark all that apply)

- Intellectual property management for the academic researcher
- Industry collaboration for the academic researcher
- Self-employment skills
- Writing a business plan
- Creating and managing a small organization
- Community leadership
- Create / manage your own career
- Non-faculty career alternatives
- Managing a faculty career entrepreneurially
- Other (please describe)

Part III. Demographic Information

Please provide the following demographic information. Remember, all of your responses are confidential, and data will only be analyzed in group form.

16) Faculty Status

- Tenured
- Tenure-track
- Full Time Temporary
- Adjunct (part time)

17) Faculty Rank

- Instructor
- Assistant
- Associate
- Full

18) Have you received special awards/recognitions in the last five years for... (check all that apply)

- Teaching
- Research / Scholarship
- Service
- Other (please specify)

19a) Have you ever held a full-time position in a non-academic environment?

Yes

No

19b) If YES, how many years? _____

20) In which school is your primary affiliation?

A LAS
_____ DEPARTMENT?

B BUS
_____ DEPARTMENT?

C SPS
_____ DEPARTMENT?

21) What is your gender?

Female

Male

22) What is your race or ethnicity?

African American

Asian or Pacific Islander

Caucasian (non Hispanic/Latino(a))

Hispanic/Latino(a)

Native American

Other

THANK YOU for completion of this survey. Please return to:

Professor Ray Moroye

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(303) 556-4668

MSCD West Classroom 246C

Faculty Fellow _____

Email

Office

Phone

Appendix E:
TABLES

Table 1: Group Statistics of Mean Comparison by Independent Sample Test of those Significant Alternatives in Question #1 by Gender

		N	Mean	Std. Deviation	Std. Error Mean
l. Leading a curriculum re-design effort					
Female	1	34	5.7941	1.2975	0.2225
Male	2	45	5.2889	1.2902	0.1923
w. Consulting with other organizations on a pro bono basis					
Female	1	34	5.2059	1.2500	0.2144
Male	2	44	4.4773	1.4862	0.2241

Table 2: Independent Samples Test of those Significant Alternatives in Question #1 by Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	DF	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
l. Leading a curriculum re-design effort											
Female	1	0.08	0.78	1.72	77.00	0.09	0.51	0.29	-	1.09	
Male	2			1.72	71.00	0.09	0.51	0.29	-	1.09	
w. Consulting with other organizations on a pro bono basis											
Female	1	0.34	0.56	2.30	76.00	0.02	0.73	0.32	0.10	1.36	
Male	2			2.35	75.41	0.02	0.73	0.31	0.11	1.35	

Table 3: Nonparametric Test: Mann-Whitney Test of those Significant Alternatives in Question #1 by Gender

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
l. Leading a curriculum re-design effort								
Female	1	34	45.32	1541.00	584	1619	-1.848	0.065
Male	2	45	35.98	1619.00				
w. Consulting with other organizations on a pro bono basis								
Female	1	34	45.01	1530.50	560.5	1550.5	-1.950	0.051
Male	2	44	35.24	1550.50				

Table 4: Group Statistics of Mean Comparison by Independent Sample Test of those Significant Alternatives in Question #2a by Gender

		N	Mean	Std. Deviation	Std. Error Mean
r. Consulting with other organizations for a fee					
Female	1	28	0.18	0.39	0.07
Male	2	42	0.40	0.50	0.08

Table 5: Nonparametric Test: Mann-Whitney Test of those Significant Alternatives in Question #2a by Gender

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
r. Consulting with other organizations for a fee								
Female	1	28	30.75	861.00	455	861	-1.983	0.047
Male	2	42	38.67	1624.00				

Table 6: Group Statistics of those Significant Alternatives in Question #2b by Gender

		N	Mean	Std. Deviation	Std. Error Mean
l. Leading a curriculum re-design effort					
Female	1	27	0.9259	0.2669	0.0514
Male	2	42	0.7619	0.4311	0.0665

Table 7: Nonparametric Test: Mann-Whitney Test of those Significant Alternatives in Question #2b by Gender

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
l. Leading a curriculum re-design effort								
Female	1	27	38.44	1038.00	474	1377	-1.742	0.082
Male	2	42	32.79	1377.00				

Table 8: Group Statistics of Mean Comparison by Independent Sample Test of those Significant Alternatives in Question #4 by Gender

		N	Mean	Std. Deviation	Std. Error Mean
Enterprising... 1 2 3 4 5 6 7 ... Traditional					
Female	1	30	5.00	1.17	0.21
Male	2	41	4.46	1.87	0.29

Table 9: Independent Samples Test of those Significant Alternatives in Question #4 by Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	DF	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
				1	2	3	4	5	6	7	... Traditional
Female	1	9.35	0.00	1.38	69.00	0.17	0.54	0.39	0.24	1.31	-
Male	2			1.48	67.62	0.14	0.54	0.36	0.19	1.26	-

Table 10: Group Statistics of Question #7 by Gender

		N	Mean	Std. Deviation	Std. Error Mean
If Metro State were to provide learning opportunities that are aimed at assisting faculty in being more innovative, would you be interested in participating?					
Female	1	26	1.88	0.33	0.06
Male	2	41	1.71	0.46	0.07

Table 11: Nonparametric Test: Mann-Whitney Test of Question #7 by Gender

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
If Metro State were to provide learning opportunities that are aimed at assisting faculty in being more innovative, would you be interested in participating?								
Female	1	26	37.63	978.50	438.5	1299.5	-1.68	0.09
Male	2	41	31.70	1299.50				

Table 12: Group Statistics of Question #7b by Gender

		N	Mean	Std. Deviation	Std. Error Mean
Online courses					
Female	1	27	0.52	0.51	0.10
Male	2	42	0.19	0.40	0.06

Table 13: Independent Samples Test of Question #7b by Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	DF	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Online courses										
Female	1	16.11	0.00	2.99	67.00	0.00	0.33	0.11	0.11	0.55
Male	2			2.84	45.89	0.01	0.33	0.12	0.10	0.56

Table 14: Nonparametric Test: Mann-Whitney Test of Question #7b by Gender

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Online courses								
Female	1	27	41.89	1131.00	381	1284	-2.83	0.00
Male	2	42	30.57	1284.00				

Table 15: Group Statistics of Question #8 by Gender

		N	Mean	Std. Deviation	Std. Error Mean
Intellectual property management for students					
Female	1	28	0.11	0.31	0.06
Male	2	42	0.36	0.48	0.07

Table 16: Independent Samples Test of Question #8 by Gender

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	DF	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Intellectual property management for students										
Female	1	33.58	0.00	-	68.00	0.02	-0.25	0.10	-	-0.04
Male	2			2.41	67.97	0.01	-0.25	0.10	-	-0.06

Table 17: Nonparametric Test: Mann-Whitney Test of Question #8 by Gender

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Intellectual property management for students								
Female	1	28	30.25	847.00	441	847	-2.33	0.02
Male	2	42	39.00	1638.00				

Table 18: Group Statistics of Question #1 by School

		N	Mean	Std. Deviation	Std. Error Mean
i. Working with industry to commercialize a new technology					
LAS	1	41	4.76	1.65	0.26
BUS	2	16	6.06	1.24	0.31
r. Consulting with other organizations for a fee					
LAS	1	41	4.00	1.75	0.27
BUS	2	16	4.88	1.36	0.34
s. Starting or running a non-consulting business while employed by Metro State					
LAS	1	39	3.00	1.78	0.28
BUS	2	16	3.88	1.75	0.44
w. Consulting with other organizations on a pro bono basis					
LAS	1	41	4.44	1.45	0.23
BUS	2	16	5.44	1.41	0.35

Table 19: Nonparametric Test: Mann-Whitney Test of Question #1 by School

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
i. Working with industry to commercialize a new technology								
LAS	1	41	25.05	1027.00	166	1027	-2.94	0.00
BUS	2	16	39.13	626.00				
r. Consulting with other organizations for a fee								
LAS	1	41	26.71	1095.00	234	1095	-1.72	0.09
BUS	2	16	34.88	558.00				
s. Starting or running a non-consulting business while employed by Metro State								
LAS	1	39	25.31	987.00	207	987	-1.99	0.05
BUS	2	16	34.56	553.00				
w. Consulting with other organizations on a pro bono basis								
LAS	1	41	26.20	1074.00	213	1074	-2.09	0.04
BUS	2	16	36.19	579.00				

Table 20: Group Statistics of Question #1 by School

		N	Mean	Std. Deviation	Std. Error Mean
a. Publishing a textbook					
BUS	2	16	5.25	1.69	0.42
SPS	3	26	4.31	1.62	0.32
d. Seeking external grant funds for research					
BUS	2	16	5.50	1.93	0.48
SPS	3	26	4.54	1.50	0.29
e. Collaborating on research with non-Metro State colleagues					
BUS	2	16	5.69	1.45	0.36
SPS	3	26	4.58	1.72	0.34
f. Obtaining a patent or copyright for a new technology					
BUS	2	16	5.88	1.59	0.40
SPS	3	26	4.69	1.89	0.37
i. Working with industry to commercialize a new technology					
BUS	2	16	6.06	1.24	0.31
SPS	3	25	4.76	1.96	0.39
r. Consulting with other organizations for a fee					
BUS	2	16	4.88	1.36	0.34
SPS	3	26	3.85	1.74	0.34

Table 21: Nonparametric Test: Mann-Whitney Test of Question #1 by School

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
a. Publishing a textbook								
BUS	2	16	25.88	414.00	138	489	-1.85	0.06
SPS	3	26	18.81	489.00				
d. Seeking external grant funds for research								
BUS	2	16	26.16	418.50	133.5	484.5	-1.98	0.05
SPS	3	26	18.63	484.50				
e. Collaborating on research with non-Metro State colleagues								
BUS	2	16	26.31	421.00	131	482	-2.04	0.04
SPS	3	26	18.54	482.00				
f. Obtaining a patent or copyright for a new technology								
BUS	2	16	26.66	426.50	125.5	476.5	-2.19	0.03
SPS	3	26	18.33	476.50				
i. Working with industry to commercialize a new technology								
BUS	2	16	26.00	416.00	120	445	-2.20	0.03
SPS	3	25	17.80	445.00				
r. Consulting with other organizations for a fee								
BUS	2	16	26.03	416.50	135.5	486.5	-1.92	0.05
SPS	3	26	18.71	486.50				

Table 22: Group Statistics of Question #1 by School

		N	Mean	Std. Deviation	Std. Error Mean
a. Publishing a textbook					
LAS	1	41	5.73	1.41	0.22
SPS	3	26	4.31	1.62	0.32
b. Collaborating on research with other Metro State colleagues					
LAS	1	41	5.83	1.20	0.19
SPS	3	25	4.88	1.69	0.34
c. Being an editor or on a reviewer/advisory board of a refereed journal					
LAS	1	41	5.54	1.48	0.23
SPS	3	26	4.58	1.47	0.29
d. Seeking external grant funds for research					
LAS	1	41	5.73	1.45	0.23
SPS	3	26	4.54	1.50	0.29
e. Collaborating on research with non-Metro State colleagues					
LAS	1	41	5.85	1.24	0.19
SPS	3	26	4.58	1.72	0.34
f. Obtaining a patent or copyright for a new technology					
LAS	1	39	5.74	1.43	0.23
SPS	3	26	4.69	1.89	0.37
g. Managing a research lab, computer lab, or equivalent setups					
LAS	1	41	5.02	1.52	0.24
SPS	3	26	4.12	1.70	0.33
j. Designing a new course					
LAS	1	40	5.70	1.18	0.19
SPS	3	26	6.31	0.88	0.17
m. Conducting basic or academic research that benefits academia					
LAS	1	39	5.90	1.29	0.21
SPS	3	21	5.05	1.32	0.29
p. Integrating new teaching methods and tools into courses					
LAS	1	40	5.33	1.25	0.20
SPS	3	26	5.85	1.22	0.24
t. Serving on organizational boards					
LAS	1	40	4.18	1.32	0.21
SPS	3	26	4.81	1.44	0.28

Table 23: Nonparametric Test: Mann-Whitney Test of Question #1 by School

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
a. Publishing a textbook								
LAS	1	41	40.41	1657.00	270	621	-3.47	0.00
SPS	3	26	23.88	621.00				
b. Collaborating on research with other Metro State colleagues								
LAS	1	41	37.57	1540.50	345.5	670.5	-2.27	0.02
SPS	3	25	26.82	670.50				
c. Being an editor or on a reviewer/advisory board of a refereed journal								
LAS	1	41	38.98	1598.00	329	680	-2.69	0.01
SPS	3	26	26.15	680.00				
d. Seeking external grant funds for research								
LAS	1	41	39.94	1637.50	289.5	640.5	-3.22	0.00
SPS	3	26	24.63	640.50				
e. Collaborating on research with non-Metro State colleagues								
LAS	1	41	39.98	1639.00	288	639	-3.24	0.00
SPS	3	26	24.58	639.00				
f. Obtaining a patent or copyright for a new technology								
LAS	1	39	37.32	1455.50	338.5	689.5	-2.33	0.02
SPS	3	26	26.52	689.50				
g. Managing a research lab, computer lab, or equivalent setups								
LAS	1	41	37.90	1554.00	373	724	-2.10	0.04
SPS	3	26	27.85	724.00				
j. Designing a new course								
LAS	1	40	29.51	1180.50	360.5	1180.5	-2.20	0.03
SPS	3	26	39.63	1030.50				
m. Conducting basic or academic research that benefits academia								
LAS	1	39	34.65	1351.50	247.5	478.5	-2.60	0.01
SPS	3	21	22.79	478.50				
p. Integrating new teaching methods and tools into courses								
LAS	1	40	30.19	1207.50	387.5	1207.5	-1.80	0.07
SPS	3	26	38.60	1003.50				
t. Serving on organizational boards								
LAS	1	40	29.36	1174.50	354.5	1174.5	-2.29	0.02
SPS	3	26	39.87	1036.50				

Table 24: Group Statistics of Question #2a by School

		N	Mean	Std. Deviation	Std. Error Mean
b. Collaborating on research with other Metro State colleagues					
LAS	1	33	0.61	0.50	0.09
BUS	2	15	1.00	0.00	0.00
h. Conducting applied research that benefits non-academia					
LAS	1	33	0.21	0.42	0.07
BUS	2	15	0.67	0.49	0.13
w. Consulting with other organizations on a pro bono basis					
LAS	1	34	0.44	0.50	0.09
BUS	2	15	0.73	0.46	0.12

Table 25: Nonparametric Test: Mann-Whitney Test of Question #2a by School

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
b. Collaborating on research with other Metro State colleagues								
LAS	1	33	21.55	711.00	150	711	-2.82	0.00
BUS	2	15	31.00	465.00				
h. Conducting applied research that benefits non-academia								
LAS	1	33	21.09	696.00	135	696	-3.02	0.00
BUS	2	15	32.00	480.00				
w. Consulting with other organizations on a pro bono basis								
LAS	1	34	22.81	775.50	180.5	775.5	-1.87	0.06
BUS	2	15	29.97	449.50				

Table 26: Group Statistics of Question #2a by School

		N	Mean	Std. Deviation	Std. Error Mean
o. Incorporating themes of creativity, innovation or problem solving into coursework					
LAS	1	34	0.97	0.17	0.03
SPS	3	24	0.83	0.38	0.08
t. Serving on organizational boards					
LAS	1	34	0.41	0.50	0.09
SPS	3	24	0.79	0.41	0.08
x. Engaging in service / public engagement activities with community groups					
LAS	1	34	0.53	0.51	0.09
SPS	3	24	0.79	0.41	0.08

Table 27: Nonparametric Test: Mann-Whitney Test of Question #2a by School

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
o. Incorporating themes of creativity, innovation or problem solving into coursework								
LAS	1	34	31.15	1059.00	352	652	-1.82	0.07
SPS	3	24	27.17	652.00				
t. Serving on organizational boards								
LAS	1	34	24.94	848.00	253	848	-2.85	0.00
SPS	3	24	35.96	863.00				
x. Engaging in service / public engagement activities with community groups								
LAS	1	34	26.35	896.00	301	896	-2.03	0.04
SPS	3	24	33.96	815.00				

Table 28: Group Statistics of Question #2a by School

		N	Mean	Std. Deviation	Std. Error Mean
b. Collaborating on research with other Metro State colleagues					
BUS	2	15	1.00	0.00	0.00
SPS	3	24	0.46	0.51	0.10
e. Collaborating on research with non-Metro State colleagues					
BUS	2	15	0.67	0.49	0.13
SPS	3	24	0.38	0.49	0.10
t. Serving on organizational boards					
BUS	2	15	0.33	0.49	0.13
SPS	3	24	0.79	0.41	0.08
v. Lobbying or testifying in one's field of expertise					
BUS	2	15	0.07	0.26	0.07
SPS	3	24	0.29	0.46	0.09

Table 29: Nonparametric Test: Mann-Whitney Test of Question #2a by School

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
b. Collaborating on research with other Metro State colleagues								
BUS	2	15	26.50	397.50	82.5	382.5	-3.45	0.00
SPS	3	24	15.94	382.50				
e. Collaborating on research with non-Metro State colleagues								
BUS	2	15	23.50	352.50	127.5	427.5	-1.75	0.08
SPS	3	24	17.81	427.50				
t. Serving on organizational boards								
BUS	2	15	14.50	217.50	97.5	217.5	-2.83	0.00
SPS	3	24	23.44	562.50				
v. Lobbying or testifying in one's field of expertise								
BUS	2	15	17.30	259.50	139.5	259.5	-1.67	0.09
SPS	3	24	21.69	520.50				

Table30: Group Statistics of Question #2b by School

		N	Mean	Std. Deviation	Std. Error Mean
g. Managing a research lab, computer lab, or equivalent setups					
LAS	1	34	0.50	0.51	0.09
BUS	2	15	0.80	0.41	0.11
h. Conducting applied research that benefits non-academia					
LAS	1	34	0.62	0.49	0.08
BUS	2	15	0.87	0.35	0.09

Table 31: Nonparametric Test: Mann-Whitney Test of Question #2b by School

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
g. Managing a research lab, computer lab, or equivalent setups								
LAS	1	34	22.75	773.50	178.5	773.5	-1.95	0.05
BUS	2	15	30.10	451.50				
h. Conducting applied research that benefits non-academia								
LAS	1	34	23.13	786.50	191.5	786.5	-1.73	0.08
BUS	2	15	29.23	438.50				

Table 32: Group Statistics of Question #2b by School

		N	Mean	Std. Deviation	Std. Error Mean
k. Organizing or participating in educational events for non-academic audience					
LAS	1	34	0.76	0.43	0.07
SPS	3	23	0.52	0.51	0.11

Table 33: Nonparametric Test: Mann-Whitney Test of Question #2b by School

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
k. Organizing or participating in educational events for non-academic audience								
LAS	1	34	31.79	1081.00	296	572	-1.89	0.06
SPS	3	23	24.87	572.00				

Table 34: Group Statistics of Question #3 by School

		N	Mean	Std. Deviation	Std. Error Mean
Promotions					
LAS	1	41	0.80	0.40	0.06
SPS	3	26	0.54	0.51	0.10
Considered in tenure decision					
LAS	1	41	0.93	0.26	0.04
SPS	3	26	0.58	0.50	0.10
More research support					
LAS	1	41	0.68	0.47	0.07
SPS	3	26	0.42	0.50	0.10

Table 35: Nonparametric Test: Mann-Whitney Test of Question #3 by School

	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Promotions							
LAS	1	41	37.46	1536.00	391	742	-2.30
SPS	3	26	28.54	742.00			
Considered in tenure decision							
LAS	1	41	38.55	1580.50	346.5	697.5	-3.41
SPS	3	26	26.83	697.50			
More research support							
LAS	1	41	37.38	1532.50	394.5	745.5	-2.09
SPS	3	26	28.67	745.50			

Table 36: Group Statistics of Question #3 by School

	N	Mean	Std. Deviation	Std. Error Mean
Promotions				
BUS	2	16	0.81	0.40
SPS	3	26	0.54	0.51
Considered in tenure decision				
BUS	2	16	0.88	0.34
SPS	3	26	0.58	0.50

Table 37: Nonparametric Test: Mann-Whitney Test of Question #3 by School

	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Promotions							
BUS	2	16	25.06	401.00	151	502	-1.78
SPS	3	26	19.31	502.00			
Considered in tenure decision							
BUS	2	16	25.38	406.00	146	497	-2.00
SPS	3	26	19.12	497.00			

Table 38: Group Statistics of Question #5 for LAS and BUS

	N	Mean	Std. Deviation	Std. Error Mean				
Stifles creativity...	1	2	3	4	5	6	7	...Promotes creativity
LAS	1	39	3.21	1.47	0.24			
BUS	2	16	4.13	1.54	0.39			

Table 39: Nonparametric Test: Mann-Whitney Test of Question #5 for LAS and BUS

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Stifles creativity...		1	2	3	4	5	6	7
...Promotes creativity								
LAS	1	39	25.14	980.50	200.5	980.5	-2.12	0.03
BUS	2	16	34.97	559.50				

Table 40: Group Statistics of Question #7c by School for LAS and SPS

		N	Mean	Std. Deviation	Std. Error Mean
Industry collaboration for the academic researcher					
LAS	1	34	0.18	0.39	0.07
BUS	2	15	0.53	0.52	0.13
Grant writing					
LAS	1	34	0.50	0.51	0.09
BUS	2	15	0.07	0.26	0.07
Writing a business plan					
LAS	1	34	0.03	0.17	0.03
BUS	2	15	0.20	0.41	0.11
Creating and managing a small business or organization					
LAS	1	34	0.03	0.17	0.03
BUS	2	15	0.20	0.41	0.11

Table 41: Nonparametric Test: Mann-Whitney Test of Question #7c by School for LAS and SPS

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Industry collaboration for the academic researcher								
LAS	1	34	22.32	759.00	164	759	-2.52	0.01
BUS	2	15	31.07	466.00				
Grant writing								
LAS	1	34	28.25	960.50	144.5	264.5	-2.87	0.00
BUS	2	15	17.63	264.50				
Writing a business plan								
LAS	1	34	23.72	806.50	211.5	806.5	-1.99	0.05
BUS	2	15	27.90	418.50				
Creating and managing a small business or organization								
LAS	1	34	23.72	806.50	211.5	806.5	-1.99	0.05
BUS	2	15	27.90	418.50				

Table 42: Group Statistics of Question #7c by School for LAS and BUS

	N	Mean	Std. Deviation	Std. Error Mean
Industry collaboration for the academic researcher				
BUS	2	15	0.53	0.52
SPS	3	23	0.22	0.42
Grant writing				
BUS	2	15	0.07	0.26
SPS	3	23	0.30	0.47
Writing a business plan				
BUS	2	15	0.20	0.41
SPS	3	23	0.00	0.00
Creating and managing a small business or organization				
BUS	2	15	0.20	0.41
SPS	3	23	0.00	0.00

Table 43: Nonparametric Test: Mann-Whitney Test of Question #7c by School for LAS and BUS

	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
BUS	2	15	23.13	347.00	118	394	-1.98
SPS	3	23	17.13	394.00			
Industry collaboration for the academic researcher							
BUS	2	15	16.77	251.50	131.5	251.5	-1.73
SPS	3	23	21.28	489.50			
Writing a business plan							
BUS	2	15	21.80	327.00	138	414	-2.21
SPS	3	23	18.00	414.00			
Creating and managing a small business or organization							
BUS	2	15	21.80	327.00	138	414	-2.21
SPS	3	23	18.00	414.00			

Table 44: Group Statistics of Question #8 by School for LAS and SPS

	N	Mean	Std. Deviation	Std. Error Mean
Self-employment skills				
LAS	1	34	0.68	0.47
BUS	2	15	0.93	0.26
Writing a business plan				
LAS	1	34	0.44	0.50
BUS	2	15	0.73	0.46
Creating and managing a small business or organization				
LAS	1	34	0.32	0.47
BUS	2	15	0.80	0.41

Table 45: Nonparametric Test: Mann-Whitney Test of Question #8 by School for LAS and SPS

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Self-employment skills								
LAS	1	34	23.07	784.50	189.5	784.5	-1.91	0.06
BUS	2	15	29.37	440.50				
Writing a business plan								
LAS	1	34	22.81	775.50	180.5	775.5	-1.87	0.06
BUS	2	15	29.97	449.50				
Creating and managing a small business or organization								
LAS	1	34	21.43	728.50	133.5	728.5	-3.05	0.00
BUS	2	15	33.10	496.50				

Table 46: Group Statistics of Question #8 by School for BUS and SPS

		N	Mean	Std. Deviation	Std. Error Mean
Self-employment skills					
BUS	2	15	0.93	0.26	0.07
SPS	3	24	0.54	0.51	0.10

Table 47: Nonparametric Test: Mann-Whitney Test of Question #8 by School for BUS and SPS

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Self-employment skills								
BUS	2	15	24.70	370.5	109.5	409.5	-2.54	0.01
SPS	3	24	17.06	409.5				

Table 48: Group Statistics of Question #1by Age

		N	Mean	Std. Deviation	Std. Error Mean
a. Publishing a textbook					
≤ 45 years	1	21	4.76	1.48	0.32
> 45 years	0	57	5.54	1.54	0.20
b. Collaborating on research with other Metro State colleagues					
≤ 45 years	1	21	5.24	1.26	0.28
> 45 years	0	56	5.86	1.17	0.16
k. Organizing or participating in educational events for non-academic audience					
≤ 45 years	1	21	4.67	1.39	0.30
> 45 years	0	57	5.37	1.16	0.15
m. Conducting basic or academic research that benefits academia					
≤ 45 years	1	19	5.16	1.50	0.34
> 45 years	0	50	5.86	1.29	0.18
n. Engaging students in service learning or research projects					
≤ 45 years	1	21	4.76	1.34	0.29
> 45 years	0	56	5.75	1.07	0.14
r. Consulting with other organizations for a fee					
≤ 45 years	1	21	3.52	1.44	0.31
> 45 years	0	57	4.37	1.63	0.22
u. Organizing a conference or an interest group in an academic association					
≤ 45 years	1	21	4.71	1.52	0.33
> 45 years	0	57	5.56	1.27	0.17
x. Engaging in service / public engagement activities with community groups					
≤ 45 years	1	21	4.29	1.45	0.32
> 45 years	0	57	5.37	1.38	0.18

Table 49: Nonparametric Test: Mann-Whitney Test of Question #1by Age

	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
a. Publishing a textbook							
≤ 45 years	1	21	30.60	642.5	411.5	642.5	-2.17
> 45 years	0	57	42.78	2438.5			
b. Collaborating on research with other Metro State colleagues							
≤ 45 years	1	21	31.12	653.5	422.5	653.5	-1.96
> 45 years	0	56	41.96	2349.5			
k. Organizing or participating in educational events for non-academic audience							
≤ 45 years	1	21	32.48	682.00	451	682	-1.71
> 45 years	0	57	42.09	2399.00			
m. Conducting basic or academic research that benefits academia							
≤ 45 years	1	19	27.84	529.00	339	529	-1.90
> 45 years	0	50	37.72	1886.00			
n. Engaging students in service learning or research projects							
≤ 45 years	1	21	26.00	546.00	315	546	-3.24
> 45 years	0	56	43.88	2457.00			
r. Consulting with other organizations for a fee							
≤ 45 years	1	21	31.45	660.50	429.5	660.5	-1.96
> 45 years	0	57	42.46	2420.50			
u. Organizing a conference or an interest group in an academic association							
≤ 45 years	1	21	30.31	636.50	405.5	636.5	-2.23
> 45 years	0	57	42.89	2444.50			
x. Engaging in service / public engagement activities with community groups							
≤ 45 years	1	21	27.93	586.50	355.5	586.5	-2.81
> 45 years	0	57	43.76	2494.50			

Table 50: Group Statistics of Question #1by Age of Question #2a by Age

	N	Mean	Std. Deviation	Std. Error Mean
a. Publishing a textbook				
≤ 45 years	1	19	0.05	0.23
> 45 years	0	51	0.24	0.06
b. Collaborating on research with other Metro State colleagues				
≤ 45 years	1	19	1.00	0.00
> 45 years	0	51	0.84	0.37
k. Organizing or participating in educational events for non-academic audience				
≤ 45 years	1	19	0.89	0.32
> 45 years	0	51	0.63	0.49

Table 51: Nonparametric Test: Mann-Whitney Test of Question #2a by Age

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
a. Publishing a textbook								
≤ 45 years	1	19	30.84	586	396	586	-1.74	0.08
> 45 years	0	51	37.24	1899				
j. Designing a new course								
≤ 45 years	1	19	39.50	750.5	408.5	1734.5	-1.82	0.07
> 45 years	0	51	34.01	1734.5				
m. Conducting basic or academic research that benefits academia								
≤ 45 years	1	19	42.32	804	355	1681	-2.15	0.03
> 45 years	0	51	32.96	1681				

Table 52: Group Statistics of Question #1by Age of Question #2b by Age

		N	Mean	Std. Deviation	Std. Error Mean
k. Organizing or participating in educational events for non-academic audience					
≤ 45 years	1	19	0.53	0.51	0.12
> 45 years	0	50	0.74	0.44	0.06
t. Serving on organizational boards					
≤ 45 years	1	19	0.32	0.48	0.11
> 45 years	0	48	0.60	0.49	0.07

Table 53: Nonparametric Test: Mann-Whitney Test of Question #2b by Age

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
k. Organizing or participating in educational events for non-academic audience								
≤ 45 years	1	19	29.66	563.50	373.5	563.5	-1.69	0.09
> 45 years	0	50	37.03	1851.50				
t. Serving on organizational boards								
≤ 45 years	1	19	27.08	514.50	324.5	514.5	-2.11	0.03
> 45 years	0	48	36.74	1763.50				