
AC 2011-324: HOW CAN WE HELP FACULTY BALANCE BETWEEN TEACHING AND SCHOLARLY ACTIVITIES?

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How Can We Help Faculty Balance Between Teaching and Scholarly Activities?

Abstract

Boise State University (BSU), which is among the fastest growing institutions of higher education in the Northwestern United States, is categorized as a Master's College and University (*larger programs*) by the Carnegie Classifications system. With the vision of becoming a metropolitan research university of distinction, BSU is transforming from a teaching-based to a research-based university. Embracing this transformation, BSU's College of Engineering seeks to establish balanced workloads between teaching and scholarly activities among its faculty by providing appropriate evaluation, rewards, and support. During the 2009-2010 academic year, the college's Teaching and Learning Committee conducted a survey with the full-time faculty members to better understand their perceptions about the current workload ratio between teaching and scholarly activities, the current evaluation and reward systems, and institutional support. A total of 69 full-time faculty members were invited to participate in the survey, and 42 of them (61%) completed the survey. The primary results were: (1) Assistant and associate professors think that their actual teaching load is heavier than their ideal teaching load. (2) Full professors feel that they maintain a good balance between their teaching and scholarly activities and incorporate their research into teaching. (3) The faculty perceive different levels of performance expectations from the university, college and departments. (4) The faculty perceive that the reward system for excellent teaching is vague and insufficient in contrast to the reward system for scholarly activities. These results can be used to develop appropriate guidelines to assist faculty members during the process of institutional transformation from a teaching-based to a research-based university.

Introduction

Regardless of whether it is primarily teaching-oriented or research-oriented, a university needs dedicated teachers, productive researchers, and effective administrators¹. In engineering colleges in particular, where research productivity often outweighs teaching effectiveness, faculty members might struggle to maintain balance among a multiplicity of roles and responsibilities. Lacking the skills to effectively balance teaching, research, and service workloads, with limited pedagogical training at the graduate and/or post-doctoral level, novice faculty often adopt trial and error techniques². Although there is a wealth of educational research in the literature that can help faculty apply new teaching strategies and improve their teaching effectiveness, engineering faculty as disciplinary scholars are often not aware of such information. In addition to the lack of pedagogical training, barriers to accepting the scholarship of teaching and learning in engineering education include a lack of proper assessment methods and limited reward systems to support quality scholarship of teaching and learning^{3,4}. Although prioritization among faculty activities would be influenced by the institution's current evaluation and reward systems, there are few incentives for engineering faculty to engage in the scholarship of teaching and learning. If faculty members favor a balanced emphasis on teaching and research, but perceive that their institution places greater emphasis on one over the other, it could create potential conflict between faculty values and university culture.

Changing Emphasis on Teaching and Research at Research Universities

According to the Carnegie Classifications system, which is used to classify accredited, degree-granting colleges and universities in the United States, doctorate-granting institutions award at least 20 doctoral degrees per year (see <http://classifications.carnegiefoundation.org>). These ‘research universities’ are differentiated from other institutions for putting great emphasis on research activities. However, a national study conducted by the Center for Instructional Development at Syracuse University⁵ suggests that there has been a general shift in perceptions of faculty at research-oriented universities from a strong emphasis on research toward a more balanced emphasis between research and teaching. This philosophical change can be observed in individual faculty members’ perceptions, as well as the organizational structure and culture of the institution⁶.

Organizational problems arise when faculty’s personal preferences and behaviors are not supported by the structure and culture of the institution. A national survey with 33 public and 14 private research universities⁷ showed that faculty perceived that the institution placed greater emphasis on research than on teaching, while the faculty tend to favor a balanced emphasis between research and teaching, indicating potential conflict between the university culture and faculty values. In such cases, faculty tend to express a need for the administration to increase commitment to teaching, to change existing incentive systems for effective teaching, and to provide better infrastructure for faculty development⁶.

The degree of preference and importance between teaching and research activities may also vary among individual faculty members, departments, colleges, and universities. Even among research universities, there is substantial variation between academic departments in the degree of emphasis on, and the amount of faculty workload in, teaching and research⁸. Although variation in faculty workload between teaching and research is healthy for ensuring quality education in the classroom, as well as quality research productivity, variation in faculty rewards does not reflect this variation in faculty workload^{8,9,10}. When compared to the typical, quantitative reward system for research, which is based on funding and publication productivity, evaluation of teaching is difficult because of its qualitative and subjective nature and is often limited to student course evaluations despite other available evaluation methods^{1,4}.

In addition, ‘balancing’ is an elusive and subjective concept. The balance between teaching and research can be defined and pursued differently as individual faculty try to advance their academic careers¹¹. Recent research conducted with a sample of science and engineering faculty at top U.S. research universities¹² shows that research university faculty’s allocation of time to teaching, research, grant writing, and service differs before and after they have been tenured and promoted to full professor. For example, tenure-track assistant professors in research universities tend to spend more time in research and grant writing than tenured faculty. Once tenured and promoted to associate professors, faculty tend to spend more time in teaching and service and less time in research and grant writing than the amounts that they spent in those categories as pre-tenure faculty. After being promoted to full professors, they tend to spend less time in teaching and more time in service.

Growing Pains during Transformation to a Research University

As a traditionally teaching university transforms into a research university, it will likely experience growing pains in various ways, facing the needs for changing faculty roles, satisfying their needs, and changing its organizational structure. The balancing act in this case is different from the changing trend at research universities described previously. The faculty in teaching universities who attempt to put a balanced emphasis on teaching and research (by trying to incorporate more research activities into their workload without impacting their mandated teaching activities) would experience different types of challenges than faculty at research universities who are expected to maintain balanced workloads between teaching and research. During the early transformation process, faculty performance evaluation metrics and promotion criteria may be unclear because they are in a state of flux and there may be a lack of consensus on what they should ultimately be. The university may also face an ‘identity crisis’ problem in that it needs to be both a teaching and research university at the same time but has neither the culture nor the infrastructure to successfully support both.

With the vision of becoming a metropolitan research university of distinction, our institution, Boise State University, is currently transforming from a traditional teaching university to a research university. Currently in the Master’s Colleges and Universities (larger programs) category by the Carnegie Classifications system, BSU is one of the fastest growing higher education institutions in the Northwestern United States. BSU currently offers four doctorate degrees, 74 master degrees, 99 bachelor degrees, and 14 graduate certificate programs. In 2010, it conferred eight doctorate degrees, 547 master degrees, 2,179 bachelor degrees, and 133 certificates, and its enrollment has reached up to almost 20,000.

Balancing teaching and research has been an important issue in our institution, especially for the College of Engineering (COEN), as the college plays an important role in contributing to achieving the institutional goal of becoming a more research-oriented university. The COEN, founded in 1997, is comprised of seven departments – 1. Civil Engineering, 2. Computer Science, 3. Construction Management, 4. Electrical & Computer Engineering, 5. Instructional & Performance Technology, 6. Materials Science & Engineering, and 7. Mechanical & Biomedical Engineering. The COEN currently offers six Bachelor of Science degrees, six minors, seven Master of Science degrees, one Master of Engineering degree, and a PhD degree. The COEN’s research expenditures have increased 104% since 2002. About 100 proposals were submitted during 2010 and the current success rate of external research funding proposals is 50%, nearly five times the national average in engineering. In fiscal year 2009, BSU’s research funding increased to a university record \$37 million¹³, about 1/3 of which were the COEN’s contributions.

These recent changes have brought a number of challenges to individual departments and faculty members, as well as the college as a whole. Producing lasting change with a balanced emphasis on teaching and research requires a healthy cultural transformation, which begins with understanding stakeholders’ perceptions and values⁶. For that reason, the COEN recently put effort into investigating the faculty’s perceptions and values during the transformation process. The COEN’s Teaching and Learning Committee (TLC) led the investigation effort. The TLC consists of seven faculty members, one from each of the seven departments in the college, and the committee also closely works with the executive committee (EXCO) of the college. The following section describes the study conducted by the TLC to better understand the COEN

faculty's perceptions toward their current teaching and research workloads and to assist the EXCO in developing solutions for providing better environmental and administrative support to the faculty members.

A Study of Engineering Faculty's Perceptions on Teaching and Scholarly Activities

[1] Study Background

During the 2009-2010 academic year, the COEN's TLC conducted a survey with COEN full-time faculty members to better understand their perceptions about the current workload ratio between teaching and scholarly activities, the current evaluation and reward systems, and institutional support. The TLC members first conducted unstructured interviews with COEN faculty members. Based on the common themes found in the interview data, the TLC developed a survey instrument (see Appendix A). The committee sent out an email message to a total of 69 COEN full-time faculty members in May 2010, inviting them to voluntarily participate in an anonymous web-based survey using Qualtrics™. Forty-two members (61%) submitted the survey. The Dean, Associate Dean of Academic Affairs, and Assistant Dean for Research and Infrastructure were excluded from the survey pool.

A summary of age and rank of the 42 COEN faculty members who participated in the survey is presented in Tables 1 and 2.

Table 1. Faculty Age

	In the 20s or 30s*	In the 40s	In the 50s or 60s*	No response
Frequency	10	20	10	2
Percentage	23.8%	47.6%	23.8%	4.8%

* Categories are combined in order to ensure anonymity.

Table 2. Faculty Rank

	Assistant Professor	Associate Professor	Full Professor	Other		
				Instructor	Research Faculty	Un-specified
Frequency	12	15	6	2	4	3
Percentage	28.6%	35.7%	14.3%	4.8%	9.5%	7.2%

The participating faculty members have been working at BSU for 1 to 19 years (an average of 7.4 years). Table 3 shows the average number of years employed at BSU by faculty rank.

Table 3. Average Employment Years at BSU by Rank

	Assistant Professor	Associate Professor	Full Professor	Other		
				Instructor	Research Faculty	Un-specified
Years	5.1	10.0	8.8	5.0	No response	3.7

[2] Faculty's Personal Ideal vs. Actual Workload Ratio between Teaching and Scholarly Activities

In our survey, the term, *teaching activities*, was defined as activities of course preparation and teaching in the classrooms and/or labs, and the term, *scholarly activities*, was defined as activities including research, publication/presentation activities, and grant-writing. Also, it should be noted that the term “faculty’s actual workload” used in this report refers to their *self-reported* actual workload.

Faculty’s Ideal Workload Ratio

The COEN faculty reported that they would ideally like to have a balanced workload between teaching activities and scholarly activities - their personal ideal ratio between teaching activities and scholarly activities is about 48% to 52%. See Figure 1.

Faculty’s Actual Workload Ratio

Faculty members’ self-reported actual workload ratio shows that they spend more time on teaching than scholarly activities - their actual ratio between teaching activities and scholarly activities is about 60% to 40%. See Figure 2. This means that faculty are spending 12.5% (= 60.2% - 47.7%) more on teaching than their ideal teaching load.

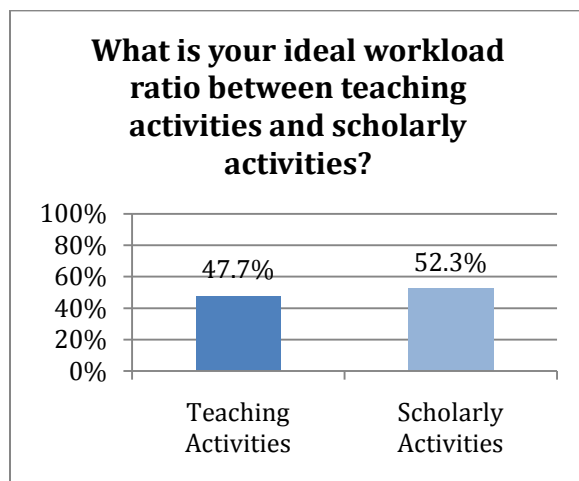


Figure 1. Faculty’s personal ideal workload ratio.

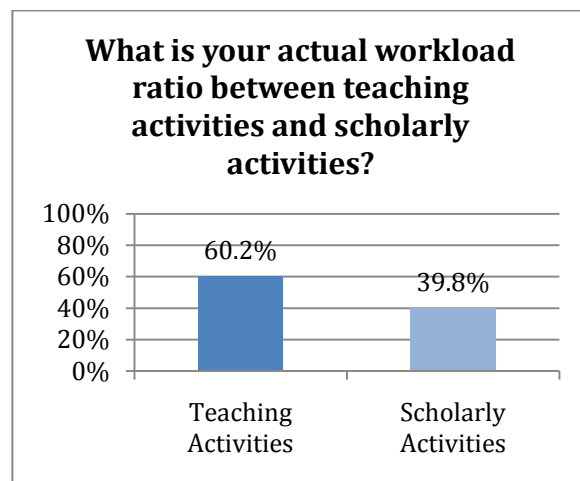


Figure 2. Faculty’s self-reported actual workload ratio.

Faculty’ Ideal Ratio vs. Actual Ratio - Overall

Eight faculty members (19.1%) report that their actual ratio matches their ideal ratio. The other 34 members (80.9%) report that they are not maintaining their ideal ratio as their actual workload – more specifically,

- 5 members (11.9%) spend an average of 16% less than their ideal ratio on teaching, and
- 29 members (69.1%) spend an average of 21% more than their ideal ratio on teaching.

Faculty’s Ideal Ratio vs. Actual Ratio - by Faculty Rank

Among three faculty ranks (assistant, associate, and full professor), there is a tendency that as the faculty rank becomes higher, their ideal teaching load ratio becomes lower (assistant professors: 51%, associate professors: 49%, and full professors: 43%). See Figure 3. When it comes to their

actual teaching load, assistant professors spend 10% more than their ideal ratio on teaching (actual – ideal = 61.7% - 51.7%), associate professors spend 14.7% more (actual – ideal = 64.0% - 49.3%), full professors spend 5% more (actual – ideal = 48.3% - 43.3%), and other categories of faculty (instructor, research faculty, and unspecified) spend 17.2% (actual – ideal = 60.0% - 42.8%) more than their ideal ratio on teaching (see Figure 4).

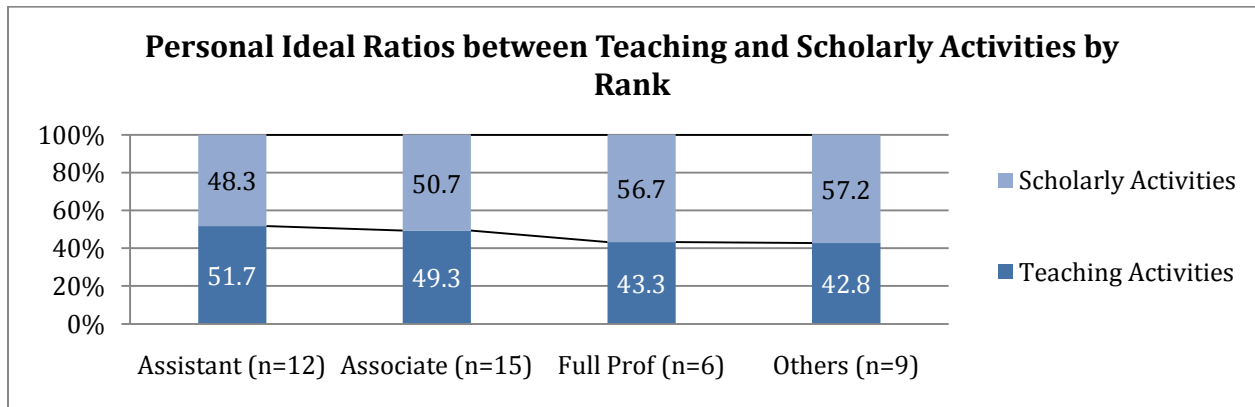


Figure 3. Faculty’s personal ideal teaching vs. scholarly activities by rank.

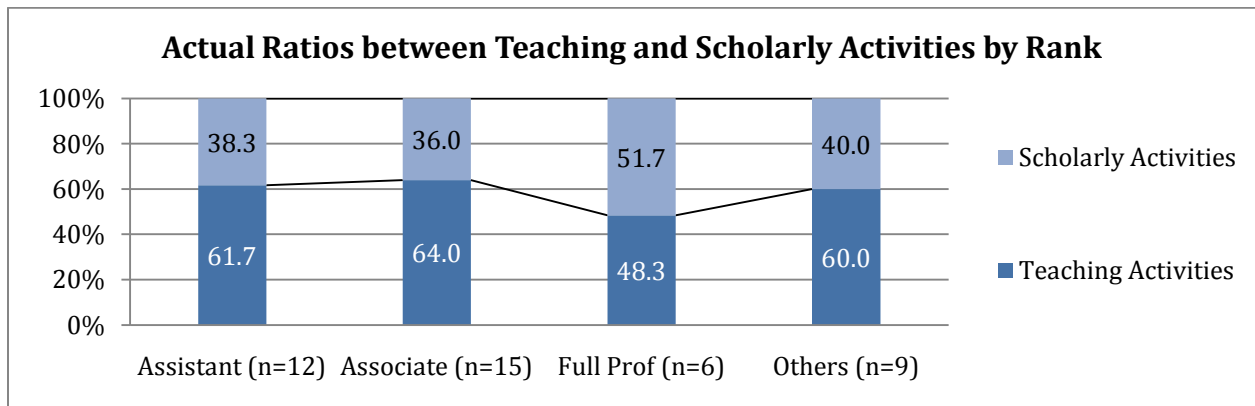


Figure 4. Faculty’s self-reported actual teaching vs. scholarly activities by rank.

[3] Faculty’s Perceived Expectations and Values on Teaching and Scholarly Activities

Faculty’s Perceptions on Expectations by University, College and Department

Overall, the COEN faculty members perceive that the university’s expectations on their teaching and scholarly activities are balanced (50.3% vs. 49.7%). However, they perceive that the College of Engineering puts more emphasis on scholarly activities (57.7%) and less on teaching (42.3%), while their department puts more emphasis on teaching (53.5%) and less on scholarly activities (46.5%). See Figure 5.

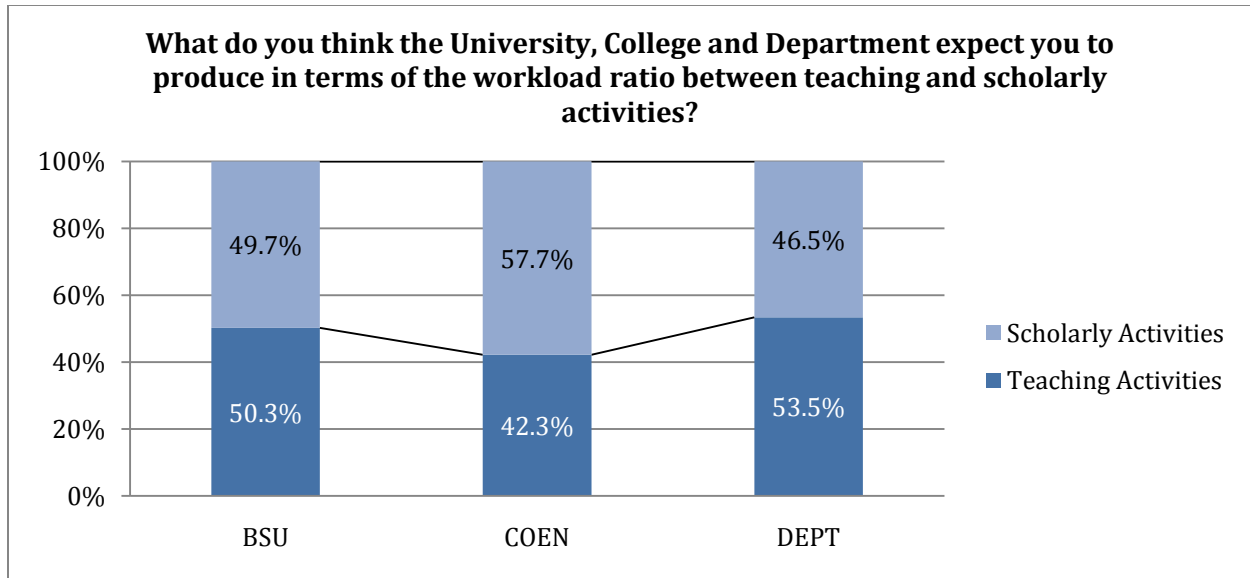


Figure 5. Faculty’s perceptions on the University’s, College’s, and Department’s expectations.

Faculty’s Personal Values on Quality Teaching and Scholarly Activities

Almost all COEN faculty members agree or strongly agree that it is important that they provide quality teaching to students and produce quality outcomes of scholarly activities. See Figure 6.

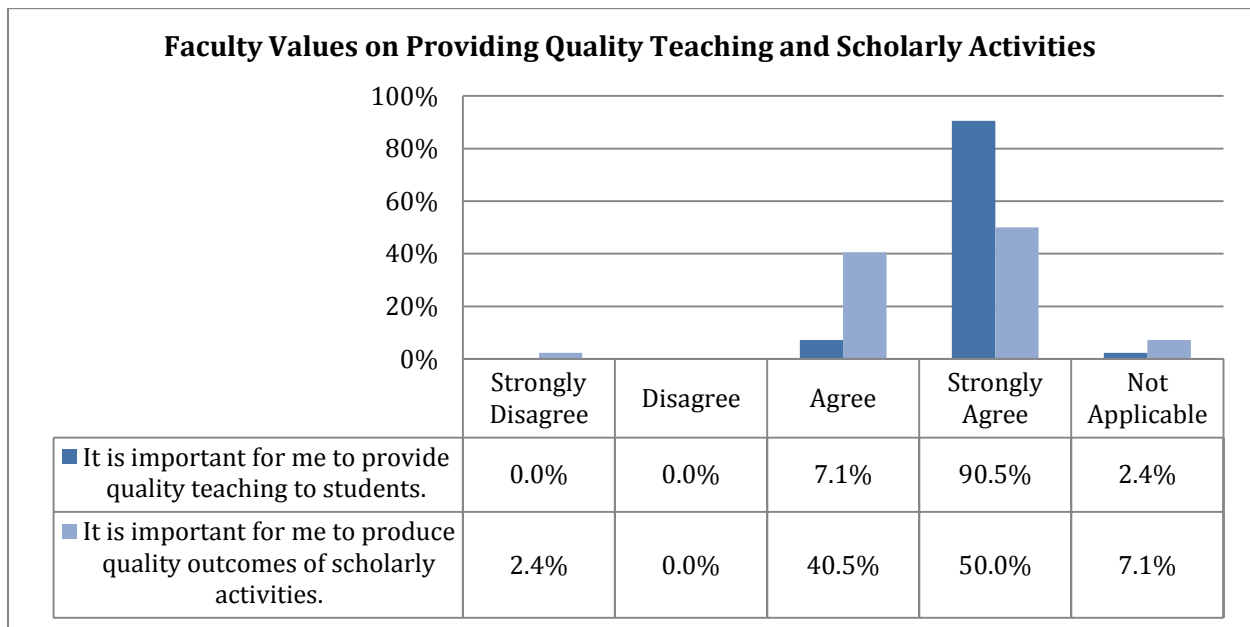


Figure 6. Faculty's values on quality teaching and scholarly activities.

Reasons Why It Is Important to Provide Quality Teaching and Scholarly Activities

Among faculty members' comments on why it is important that they provide quality *teaching* to students, the common primary reason is:

- Because teaching is the primary mission of the university and the main job responsibility as a faculty member.

When asked why it is important that they provide quality outcomes of *scholarly activities*, their reasons varied, and the following are samples of their explanations:

- “Research brings positive attention to the university; helps retain students; brings funding; improves facility.”
- “Such activities broaden learning for undergraduate students and for graduate students who wish to pursue research.”
- “Quality students are only attracted to a university with both a good research and teaching reputation.”
- “That’s how faculty develop/demonstrate their expertise.”
- “...helps me develop professionally and improve my expertise and competence.”
- “Scholarly work leads to good teaching because the researcher gains a deeper understanding of his/her field.”
- “It important to stay active in my chosen research field to update teaching materials to better prepare students for the issues they'll encounter after graduation and to maintain contacts to (hopefully) help place them.”

Impact of Scholarly Activities on Teaching

Approximately two-thirds of faculty (65.0%) view that their scholarly activities help them improve the quality of their teaching (Figure 7). Among three faculty ranks (assistant, associate, and full professor), the higher the faculty rank, the more the faculty see that their scholarly activities support their teaching, and the less they see their teaching is being sacrificed due to their scholarly activities. None of full professors think of scholarly activities as irrelevant to the quality of their teaching.

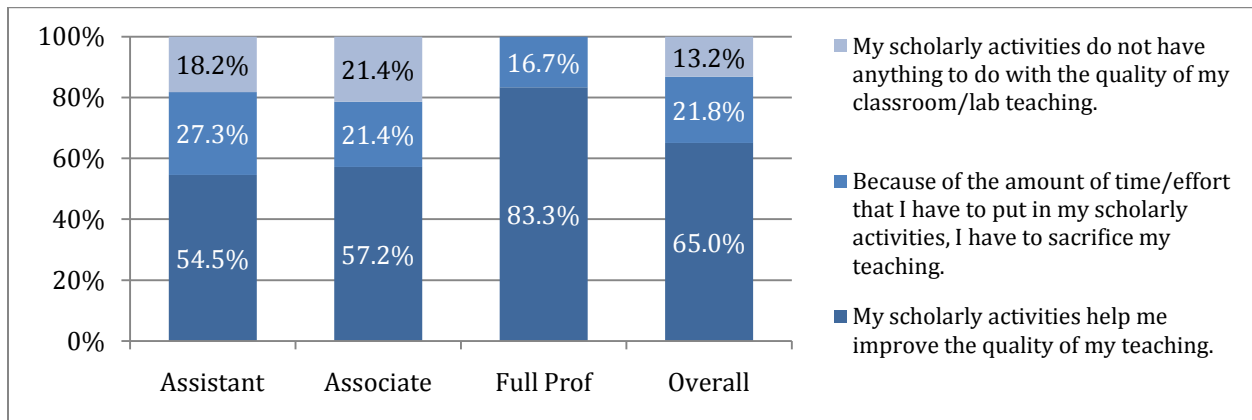


Figure 7. Impact of scholarly activities on teaching.

Faculty's Personal Values on the University's Vision

Boise State University's vision is to become a metropolitan research university of distinction. A majority of COEN faculty members (79%) agree or strongly agree that BSU should be (or become) a research university, while 21% disagree or strongly disagree with the statement. See Figure 8.

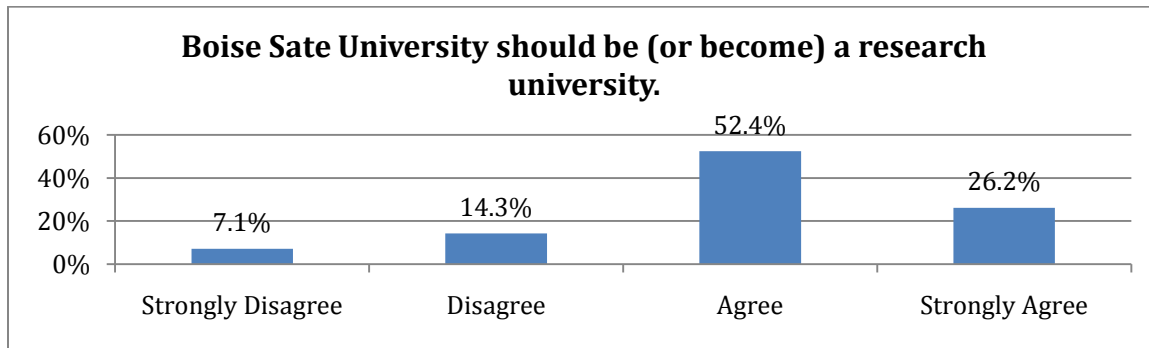


Figure 8. Faculty's values on the University's vision.

[4] Faculty's Perceptions on Current Evaluation Methods and Reward Systems

Evaluation Methods Used for Teaching Activities

Faculty members were asked whether they agree or disagree with the statement that the current evaluation method(s) that BSU, COEN, and their department use to measure the effectiveness of their *teaching* is/are sufficient.

Responses split in half – About 48% of them agree or strongly agree that the current evaluation methods used to measure the effectiveness of their teaching activities are sufficient, while about 43% of them disagree or strongly disagree with the statement (Figure 9). Among the four “I don't know” responses (9.5%), two of them are from assistant professors and two are from the ‘other’ categories (one instructor and one unspecified).

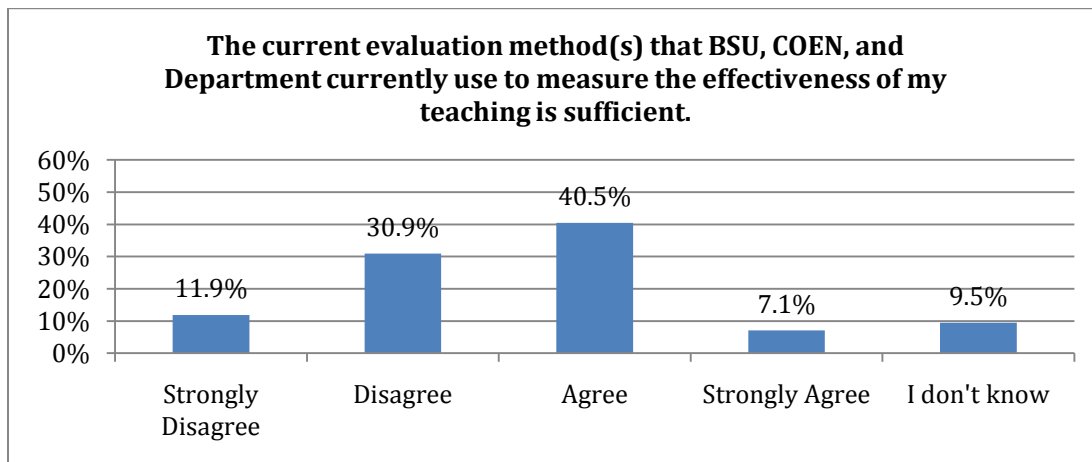


Figure 9. Faculty's perceptions on current evaluation methods for teaching.

The limitation of using a student course evaluation as the sole evaluation method was frequently mentioned in the comments. Additional evaluation methods suggested in their comments are:

- Peer evaluation with classroom visits
- Expert evaluation by the Center for Teaching and Learning
- Syllabus/pedagogical review by the Center for Teaching and Learning
- Faculty self-evaluation
- Long-term outcome evaluation (e.g., how students do after class or graduation)
- Alignment with ABET criteria

Evaluation Methods Used for Scholarly Activities

Faculty members were asked whether they agree or disagree with the statement that the current evaluation method(s) that BSU, COEN, and their department currently use to measure the effectiveness of their *scholarly activities* is/are sufficient.

About 65% of the faculty members agreed or strongly agreed with the statement, while 19% of them disagreed or strongly disagreed (Figure 10). Among the seven “I don’t know” responses (16.7%), three of them are from assistant professors and four of them are from the other categories (two instructors and two unspecified).

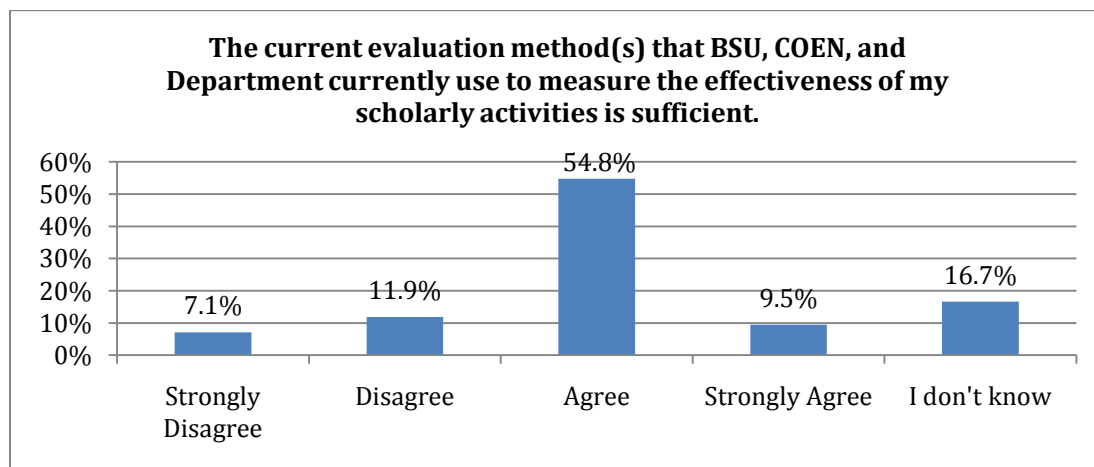


Figure 10. Faculty's perceptions on current evaluation methods for scholarly activities.

A common theme among faculty members’ comments is that the evaluation should focus more on *quality* of scholarly activities/outcomes that are recognized in the field, instead of using a “bean-counting” method (i.e., counting the number of publications, patents, and grant proposals, and the amount of grants awarded). Suggested possible measures of scholarly activities that focus on quality include:

- Considering a publication/citation ratio or the impact factor of the journal
- Invited participations at conferences, participation at expert panels
- Sole authored publications and the main author in collaborated publications (Editorial note: The ‘main’ author can be the first or last person on the author list depending on the discipline.)

Rewards/Incentives Used for Teaching Activities

Faculty members were asked whether they agree or disagree with the statement that the current reward system (incentives) that BSU, COEN, and their department currently use to reinforce the quality of their *teaching* is sufficient.

About 52% of the faculty members disagreed or strongly disagreed with the statement, while 29% agreed or strongly agreed (Figure 11). Among the eight “I don’t know” responses (19.1%), three of them are from assistant professors and five are from the other categories (one instructor and four unspecified).

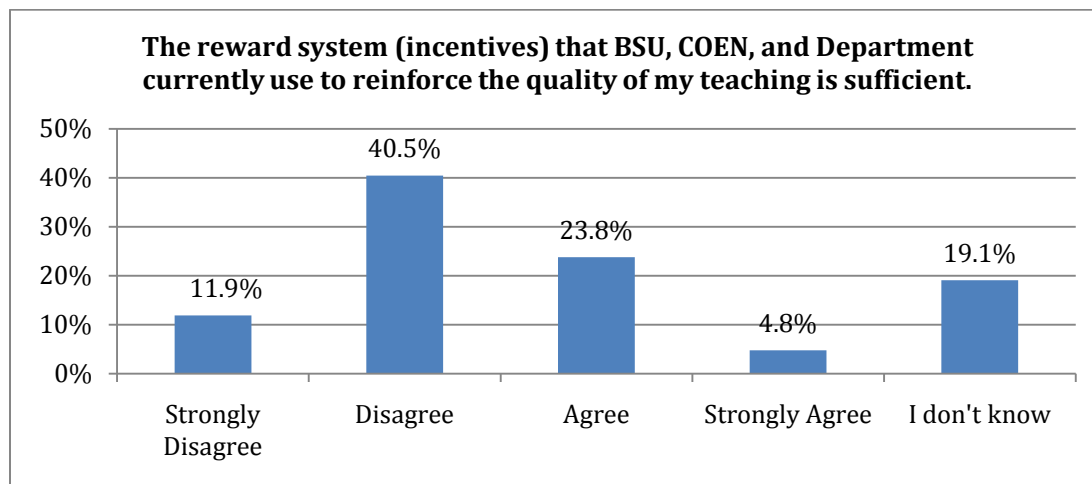


Figure 11. Faculty's perceptions on incentives for teaching.

Many faculty members commented that they were not aware of any specific reward/incentive system provided for effective teaching. Several rewards/incentives for effective teaching suggested by the faculty include:

- Recognition (teaching awards or diplomas) with financial incentives
- Commendation from dean/dept. chair
- Acknowledgments on faculty who are implementing innovative teaching methods in their classrooms, and providing effective advising
- More resources to increase instructional efficiencies while maintaining or improving instructional effectiveness
- Allowing faculty to teach the same course when shown to be effective
- Tenure and promotion based on *both* successful scholarly activities and effective teaching

Rewards/Incentives Used for Scholarly Activities

Faculty members were asked whether they agree or disagree with the statement that the current reward system (incentives) that BSU, COEN, and their department currently use to reinforce the quality of their *scholarly activities* is sufficient.

Their responses to the statement split in half – 15 faculty members (36.0%) agree or strongly agree with the statement, and the equal number (15) of faculty members disagree or strongly disagree with the statement. Also, 10 faculty members (23.8%) selected “I don’t know” and two

(4.8%) did not respond. See Figure 12. Among the 12 ‘I don’t know’ and ‘no responses,’ three of them are from assistant professors, two are from associate professors, one is from a full professor, and six are from the other categories (two instructors and four unspecified).

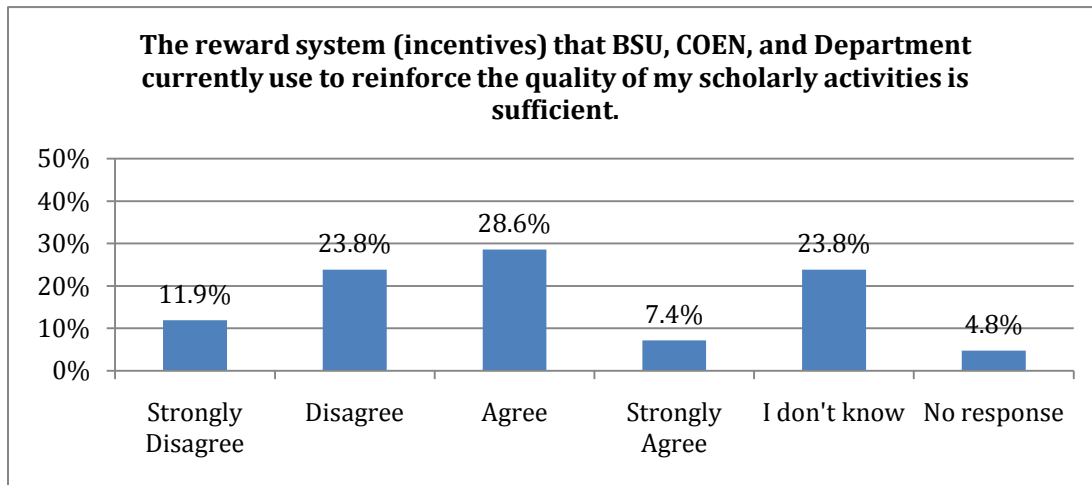


Figure 12. Faculty's perceptions on incentives for scholarly activities.

Similar to their responses to the question about rewards/incentives used for teaching, many faculty members commented that other than tenure/promotion, they were not aware of any specific reward/incentive system provided to reinforce the quality of their scholarly activities. Several rewards/incentives for successful scholarly activities suggested by the faculty include:

- Annual performance-based pay raise
- More appreciation and recognition of research and publications
- Additional resources (e.g., TAs, or professional development)
- Reduced course teaching loads for more research active faculty
- Allowing faculty to pay themselves more than 3 month summer salary

[5] Faculty’s Perceptions on Institutional Support

Environmental or Administrative Support for Teaching and Scholarly Activities

Faculty members were asked to comment on environmental or administrative support that they need from the department, college and university for effective teaching and successful scholarly activities. Several common comments were found. To develop solutions for providing better environmental and administrative support to faculty, we categorized the faculty input into 5Ps:

1. **Personnel** (e.g., more TAs, RAs, GAs, graders, and faculty/IT staff)
2. **Place** (e.g., more lab/classroom space, better teaching equipment in the classroom)
3. **Policy** (e.g., reduced teaching loads and class sizes)
4. **Procedure** (e.g., reduced paperwork, effective tracking system, and responsive staff)
5. **Professional development** (e.g., just-in-time workshop and faculty mentoring).

[6] Summary and Conclusions

With the vision of becoming a metropolitan research university of distinction, BSU is transforming from a teaching-based to a research-oriented institution. Attempting to better understand the stakeholders' involvement in this transformation, COEN faculty members' perceptions, values, and expectations of a balanced workload between teaching and scholarly activities have been compiled. Implications of notable findings for our college are discussed below.

Acknowledge the difference between ideal vs. actual ratios: The COEN faculty's personal ideal ratio between teaching and scholarly activities is about 48% to 52%; however, their self-reported actual ratio between teaching and scholarly activities is about 60% to 40% (Figures 3 and 4). In other words, the COEN faculty members perceive it to be ideal if they could engage less in course preparation and classroom/lab teaching and more in scholarly activities such as conducting research, writing grant proposals, publishing papers, and presenting at conferences. Despite the faculty's desire to engage more in scholarly activities than in teaching, their current workloads are still heavier on teaching than on scholarly activities. Another important finding was that the COEN faculty members feel that the reward system (incentives) for their teaching activities is insufficient (Figure 11). This could cause feelings of under-appreciation especially among assistant and associate professors who perceive themselves as having heavier teaching loads than ideal (Figure 4).

Integration between teaching and scholarly activities: One of the notable distinctions in the COEN faculty was that among three faculty ranks (assistant, associate, and full professor), the full professors' ideal and actual scholarly activity workloads were higher than assistant and associate professors' (Figures 3 and 4). This is different from the research results found from a sample of research universities¹² showing that in research universities, pre-tenure assistant professors tend to spend more time in research and grant writing than tenured faculty whereas tenured and promoted faculty tend to spend more time in teaching and service and less time in research and grant writing. Also, unlike the common belief that once faculty members are tenured and promoted, their motivation to engage in scholarly activities diminishes, our data shows otherwise – the COEN faculty members' desire to engage in scholarly activities increases as their rank changes from assistant to associate, and to full professor. The senior faculty's leadership and involvement in research activities certainly has contributed to the transformation toward a more research-oriented institution. This is also supported by the results of our survey that the higher the faculty rank, the more the faculty members perceive that their scholarly activities actually help them improve the quality of their teaching. In other words, full professors seem more able to integrate their research activities into their teaching activities (and vice versa) than junior faculty members. We embrace this aspect of integrating teaching and scholarly activities as a unique quality and strength of the education that we provide to students, especially during the transformation process. Moreover, we need to provide junior faculty members with more support to integrate their research and teaching activities. A few strategies include providing faculty development programs at the college level to foster integration of teaching and research, and formally recognizing and rewarding faculty members who successfully integrate their teaching and research, as well as academic programs that adopt effective strategies¹⁴. Junior faculty may be assigned to teach research-based courses that are closely aligned with their research expertise while minimizing the number of new courses they need to prepare, until they

improve their teaching skills and ‘learn the ropes’ for more broad-based service courses. This can help the faculty integrate their teaching and scholarly activities and continue to develop their research techniques during their early years of teaching. In addition to such formal institutional support, junior faculty members need informal, practical support and guidance through frequent communications with mentors¹⁵.

Avoid the identity crisis syndrome: The COEN faculty members perceive that the College of Engineering puts more emphasis on scholarly activities (57.7%) than teaching (42.3%), and their department puts more emphasis on teaching (53.5%) than scholarly activities (46.5%). The difference in their perceptions of the college’s expectations and their department’s expectations may indicate a lack of clear faculty performance evaluation and promotion criteria in the midst of transition from a teaching-oriented university to a research-oriented institution. This is a challenge that COEN faculty face, and proper interventions should be implemented before it is escalated to an ‘identity crisis’ situation. Especially, for pre-tenure faculty, the inconsistent levels of perceived expectations from the university, college, and department would make their preparation process for tenure and promotion more difficult. Also, it is important to pay attention to the fact that most of the “I don’t know” responses to the questions asking about the current evaluation methods and reward systems used for measuring their teaching effectiveness and scholarly activities came from pre-tenure assistant professors and instructor/research faculty. Associate and full professors who have been through the tenure and promotion process are apparently aware of the current evaluation methods used for measuring teaching effectiveness and productivity of scholarly activities. These results clearly indicated to us that we need to provide pre-tenure level engineering faculty, as well as non-tenure track instructors and research faculty, with clear guidelines and expectations explicitly stated starting in year one, using annual evaluations and frequent feedback to help them develop desirable track records.

Ongoing institutional support: As described in Section 5, the common comments that the COEN faculty members made about environmental or administrative support that they need from the department, college and university for effective teaching and successful scholarly activities can be categorized into 5Ps: personnel, place, policy, procedure and professional development. The COEN has initiated several action plans that would make improvements on providing support to faculty on the areas of policy, procedure and professional development.

- The COEN’s TLC is developing more comprehensive guidelines for documenting evidence of faculty teaching effectiveness (policy) and working closely with the Center for Teaching and Learning (university-wide) to provide customized workshops to COEN faculty (professional development).
- The COEN’s Research and Scholarly Activities Committee has been charged to identify, develop and lead efforts directed toward the establishment of financial reporting systems and consistent, flexible workload policy that support annual evaluation processes (procedure and policy).
- The COEN’s Promotion and Tenure Committee has developed criteria and guidelines for promotion of research faculty (policy). Plans are underway to provide a similar career progression pathway for non-tenure track teaching faculty.
- Additionally, the EXCO is implementing *Lean Management* projects¹⁶ by forming several lean teams who lead efforts on the following areas (procedure and policy):

- a. Administrative processes – to determine what administrative processes the College has control or influence over; to suggest a priority order to address identified issues; to solicit open feedback on processes using LEAN principles; and to bring recommendations to EXCO.
 - b. Information technology system – to evaluate how requests are made, prioritized and tracked in the College; to determine what tasks are appropriate to the College level vs. the University level; to investigate the feasibility of transitioning some services to the University level and evaluate the impact; and to provide recommendations to EXCO.
 - c. Research – to determine a manageable and consistent workload target and make that data useful for external and grant reporting efforts; to work with faculty to clarify grant management expectations, evaluate processes (with special attention to duplication) and work with university research and budget offices to streamline processes; and to draft policy/process for discussion in all departments and at EXCO.
 - d. Promotion, tenure, and annual evaluation – to evaluate the COEN’s promotion and tenure and annual evaluation policies and procedure specifically regarding portfolio format and content¹⁷ in keeping with University Policy and LEAN Principles, and make recommendations to EXCO for changes in these policies.
- The Dean has established the following practices:
 - a. In addition to meeting with all pre-tenure faculty annually, she also meets with all faculty serving on tenure review progress committees to clarify and improve evaluation and promotion processes.
 - b. Departments are encouraged to discuss teaching effectiveness and commitment to teaching improvement and to highlight successes within the department. Chairs are to rethink performance rewards¹⁸.
 - c. The College-wide Spring Forum focused on teaching effectiveness.
 - d. The College of Engineering Professor of the Year Award will highlight the integration of teaching and research.

The COEN will also continue to work on making positive changes in the personnel and place categories, which require long-term plans and a considerable amount of funding. Progress has been made since the administration of this survey in acquiring new funding for general engineering instructor, professional advisor, and GA positions. Renovations are underway to enhance existing research and teaching laboratories, and space requests and plans have been submitted for additional, improved teaching, computational and visualization facilities that encourage the integration of research and teaching.

Appendix A – The COEN Faculty Survey Questionnaire

[1] Value/Expectation

1-1. What is your ideal workload ratio between teaching activities and scholarly activities?
(Total must sum to 100%)

Ideal ratio: $\frac{\quad}{\text{Teaching Activities}}\% + \frac{\quad}{\text{Scholarly Activities}}\% = 100\%$

1-2. What is your actual workload ratio between teaching activities and scholarly activities?
(Total must sum to 100%)

Actual ratio: $\frac{\quad}{\text{Teaching Activities}}\% + \frac{\quad}{\text{Scholarly Activities}}\% = 100\%$

1-3. (If the ideal and actual ratios are different)
What are the barriers to pursuing/maintaining your ‘ideal’ workload ratio?

1-4. What do you think **Boise State University** expects you to produce in terms of the workload ratio between teaching activities and scholarly activities? (Total must sum to 100%)

Boise State University expects: $\frac{\quad}{\text{Teaching Activities}}\% + \frac{\quad}{\text{Scholarly Activities}}\% = 100\%$

1-5. What do you think **the College of Engineering** at Boise State University expects you to produce in terms of the workload ratio between teaching activities and scholarly activities?
(Total must sum to 100%)

The College of Engineering expects: $\frac{\quad}{\text{Teaching Activities}}\% + \frac{\quad}{\text{Scholarly Activities}}\% = 100\%$

1-6. What do you think **your department** in the College of Engineering at Boise State University expects you to produce in terms of the workload ratio between teaching activities and scholarly activities? (Total must sum to 100%)

Your department expects: $\frac{\quad}{\text{Teaching Activities}}\% + \frac{\quad}{\text{Scholarly Activities}}\% = 100\%$

1-7. Boise State University should be (or become) a research university.

Strongly disagree Disagree Agree Strongly agree

1-8. Please write the name of a University that you would like Boise State University to thrive towards:

[2] Impact of Scholarly Activities on Teaching and Vice Versa

2-1. Think about **how your scholarly activities affect your classroom/lab teaching**. Select one that best describes your current situation:

- I engage in teaching and scholarly activities; and my scholarly activities help me improve the quality of my teaching.
- I engage in teaching and scholarly activities; however, because of the amount of time/effort that I have to put in my scholarly activities, I have to sacrifice my teaching.
- I engage in teaching and scholarly activities; however, my scholarly activities do not have anything to do with the quality of my classroom/lab teaching.
- I do not teach in the classroom/lab; I only engage in scholarly activities.
- I do not engage in scholarly activities; I only teach in the classroom/lab.

2-2. Think about **how your classroom/lab teaching affects your scholarly activities**. Select one that best describes your current situation:

- I engage in teaching and scholarly activities; and teaching helps me improve the quality of my scholarly activities.
- I engage in teaching and scholarly activities; however, because of the amount of time/effort that I have to put in my teaching, I have to sacrifice my scholarly activities.
- I engage in teaching and scholarly activities; however, my teaching activities do not have anything to do with the quality of my scholarly activities.
- I do not teach in the classroom/lab; I only engage in scholarly activities.
- I do not engage in scholarly activities; I only teach in the classroom/lab.

[3] Faculty Role

3-1. It is important that I as a faculty member provide quality teaching to students.

Strongly disagree Disagree Agree Strongly agree Not applicable to me

3-2. Please explain why you think so:

3-3. It is important that I as a faculty member produce quality outcomes of scholarly activities.

Strongly disagree Disagree Agree Strongly agree Not applicable to me

3-4. Please explain why you think so:

[4] Faculty Evaluation and Reward System

4-1. The current evaluation method(s) that Boise State University, the College of Engineering, and/or my department currently use to measure the effectiveness of my teaching is sufficient.

Strongly disagree Disagree Agree Strongly agree I do not know

4-2. What methods should be used to measure the effectiveness of your teaching?

4-3. The reward system (incentives) that Boise State University, the College of Engineering, and/or my department currently use to reinforce the quality of my teaching is sufficient.

Strongly disagree Disagree Agree Strongly agree I do not know

4-4. What reward systems (incentives) would you like to be used to reinforce effective teaching?

4-5. The current evaluation method(s) that Boise State University, the College of Engineering, and/or my department currently use to measure the effectiveness of my scholarly activities is sufficient.

Strongly disagree Disagree Agree Strongly agree I do not know

4-6. What methods should be used to measure the effectiveness of your scholarly activities?

4-7. The reward system (incentives) that Boise State University, the College of Engineering, and/or my department currently use to reinforce the quality of my scholarly activities is sufficient.

Strongly disagree Disagree Agree Strongly agree I do not know

4-8. What reward systems (incentives) would you like to be used to reinforce successful scholarly activities?

[5] Environmental Factors/Administrative Support

5-1. What environmental or administrative support from the department, college and university do you need for effective teaching?

5-2. What environmental or administrative support from the department, college and university do you need for successful scholarly activities?

[6] About Yourself

6-1. Your current age:

in the 20s; in the 30s; in the 40s; in the 50s; in the 60s or older

6-2. Your current rank:

Instructor/special lecturer

Research faculty

Assistant professor

Associate professor

Full professor

Other: Describe: _____

6-3. Years of employment at Boise State University: _____ Years

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