Faculty Research and Development in the Technology Disciplines

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ABSTRACT

Major faculty development efforts in higher education gained momentum in the 1960's (Millis, 1994); however, much of what has been written to-date on the subject was published in the eighties and nineties. There is no question that scholars agree that faculty development funding is a necessity. However, until now, articles have concentrated on faculty research and development as it applies across the academy, with little to no emphasis on individual disciplines. This paper visits the faculty research and development grant process and how it applies to faculty in the technology disciplines. The authors will discuss the uniqueness of the technology disciplines and how their distinctiveness affects the professional development process. A survey was sent to academic technologists to learn about faculty development standards at their college or university. Survey data indicates that there is a perception of a double standard when it comes to the development requirements for the academic technologist.

Keywords: faculty development, research and development, development funding, research funding, technology disciplines

1. INTRODUCTION

Awareness of the importance of faculty scholarship efforts in higher education gained momentum in the early 1960's. Scholars in the 1980's and 1990's began a movement to expand upon what was once a narrow definition of scholarship to also include the notion of faculty development as a broader definition of scholarship. According to DiLorenzo & Heppner (1994), "…we must broaden our perspective to capture the essence of enhancing or developing scholarship in all forms." Nathan (1994) further asserts, "Faculty development is no longer an optional or dispensable "add-on" to the list of benefits available to faculty at universities in the United States."

Development can be defined in general terms. Development is the act or process of developing; it includes both growth and progress (Development, n.d.). According to Papalia & Olds (1992), "Traditionally, development of any kind is defined as a process of systematic change that is life long and cumulative" (as cited in Reich, 1994, p. 511). Feldman (1998) states, "In the study of human behavior, the term development broadly refers to changes in individuals over time. More narrowly, in an organizational

context, development means targeted enhancement of an individual…to serve better the mission of the organization" (as cited in Camblin & Steger, 2000, p. 1).

Faculty development on the other hand, "…means different things to different people" (Watson & Grossman, 1994). Early on, the definition of scholarship took a narrow view as simply engaging in original research. Today, a number of definitions and perspectives of scholarship have been published, and they all embrace a wider view of scholarship which includes faculty development. With that, there are still a variety of definitions. However, scholars agree that development includes, but is not limited to, basic research.

According to DiLorenzo & Heppner (1994), "Faculty development is a process of enhancing and promoting any form of academic scholarship in individual faculty members." Some scholars have taken a more holistic approach to defining faculty development. Legorreta, Kelley, & Sablynski (2006) believe that there is a common understanding that faculty development, "promotes improvement of the academy in large part through helping individuals evolve, unfold, mature, grow, cultivate, produce and otherwise develop themselves as contributors to the academy's mission." Nelson (1983), describes faculty development as any endeavor, "…designed to improve faculty performance in all aspects of their professional lives – as scholars, advisors, academic leaders, and contributors to institutional decisions" (as cited in Camblin & Steger, 2000, p. 2).

Some see faculty development as enhancing the mastery of one's discipline. According to Sullivan (1983), "…faculty development has typically been concerned with the advancement of subject matter competence and the mastery of one's own discipline as it related to teaching" (as cited in Camblin & Steger, 2000, pg. 3). Gaff & Simpson (1994) argue that, "in more recent times, professional development for faculty has continued to focus primarily on cultivating greater expertise in a specific discipline" (as cited in Camblin & Steger, 2000, pg.3).

Others see faculty development as being used synonymously with the enhancement of teaching (Millis, 1994). According to Sikes & Barrett (1976), the goal of faculty development is to make "…college teaching more successful and more satisfying" (as cited in Camblin & Steger, 2000, p. 2). Ernest Boyer (1990), expressed the importance of scholarship and professional development to teaching by stating, "…the work of a scholar also means stepping back from one's investigation, looking for connections, building bridges between theory and practice, and communicating one's knowledge effectively to students" (p. 16).

It is clear that the new paradigm for scholarship includes various professional development activities. According to Legorreta (2000), "The task of developing a model FDP [faculty development plan] involves managing diversity of interests, values, and stages in the professional growth of the faculty members. A one-size-fits-all FDP is not realistic for most schools." How, if at all, does faculty development differ for the academic technologist? For the purpose of this paper, an academic technologist is anyone whose discipline includes Computer Science, Computer Information Systems, Management Information Systems, Information Science, Information Technology (IT), Computer Information Technology, IT Leadership, or those who may have shared responsibilities between and among various departments including Computer Engineering. Blignaut and Trollip (2003) suggest faculty development may take the form of specialized training in how to use technology…" (as cited in Legorreta, 2000, p.3-4).

Unlike most disciplines across the academy, technology disciplines are in a constant state of change. In order to stay current in their field and in the classroom, academic technologists are expected to not only keep up with, but to stay ahead of those changes. On an annual basis, textbooks are modified or completely re-written to keep up with the latest software programming paradigm; the software that is used as part of a course is subject to constant upgrades or version changes. The hardware that is used as one's classroom platform can become obsolete overnight. Academic technologists are required to keep abreast of rapid changes in their fields in order to remain effective in the classroom. At the same time, they typically have the same research and publication requirements as their contemporaries across campus. "Faculty development is designed to forestall faculty obsolescence" (Camblin &

Steger, 2000). Therefore, academic technologists should receive development funds for a variety of activities including research, workshops, seminars, or any other activity that will improve the faculty person's knowledge and professional skill set. The value added will ultimately be the student's classroom experience.

2. CASE EXAMPLE

The following discussion details the faculty research and development grant process used by the authors' college. The College, located 35 miles north of Boston, supports approximately 2000 full time undergraduate-only students, 85% of whom are residential, and 133 full time faculty. The College also serves an evening Division of Continuing and Professional Education Division and its only graduate school program in Education.

Each year in January, the Faculty Senate puts out a call for proposals for faculty research and development grants. Full time faculty from all divisions and departments are encouraged to apply. According to the development grant guidelines, "The scope of work appropriate for a faculty development grant must lie within the applicant's field or some other field that will contribute to the applicant's particular academic competencies." (Faculty Development Grant details can be found at

http://www.merrimack.edu/~vpoteat/FDG_Application.pdf).

Three categories for funding are considered: Category A, Education; Category B, Teaching, and Category C, Research. Category A is for educational funding, which would include, for example, course work, workshops, or any educational experience "intended to update, retrain, or acquire knowledge of a field." Category B is for teaching/pedagogy, which could include, "development of new teaching techniques, for example, interdisciplinary courses, computer-aided and audio-visual-assisted instruction." Category C is earmarked for research funds which could include "fine and applied arts projects and research and writing, which involve proposals for preparing works for publication, completing books or monographs, and continuing professional research."

Course releases are budgeted as the cost of adjunct replacement. The summer stipend has been at $2,000 since the Faculty Development Grant guidelines were revised in 1991. If the annual committee has additional funds left over, they may choose to award more.

Table 1 (Appendix A) shows a three-year history of the faculty development grant (FDG) history. The budget has been flat-lined even though applications rose by almost 50% between application years 06-07 and 07-08[i]. While 84% of the applications were funded for AY 07-08, the average grant was reduced.

No data is kept on funding by discipline at this time. Over the years, the funding for CS and MIS faculty proposals has been inconsistent, it is assumed because of the change in committee membership from year to year. There are 3.5 members of the Computer Science faculty (the half-time faculty is shared by the EE department) and one faculty from Management Information Systems who is housed in the School of Business (for three years there were two MIS faculty until that person left the college and the Dean moved the line to Accounting).

Over the years, requests have been denied including Java Programming Coursework at MIT for a CS faculty who was developing a new course. That same year the faculty member also applied for funds to develop the new Java course over the summer which was also denied. It is not a requirement for the committee to give a reason to the faculty person as to why their application was denied. However, the same faculty member from CS was funded for coursework in Object Oriented Design Patterns and, just one year after she was denied funds for the Java course, she was funded to take a course in Data Communications at MIT (1998). In the mid-1990s, the MIS professor was funded for two workshops in intermediate and advanced Access programming. She has not submitted proposals for workshop or technical coursework funding since that time not because it is unnecessary, but because of publication requirements in the Business School. She continues to do non-research oriented, technology-related development on her own.

The authors have concluded that funding for technology-related development (other than research) is based on committee composition. The committee is typically made up of

colleagues from non-technical backgrounds. When funding is tight, as it has been most years, the committee evaluates and puts in rank order the proposals according to perceived merit. We believe that our colleagues from non-technical backgrounds perceive that there is more merit and value in traditional scholarship than there is in technical courses and workshops. The Dean of the College believes that over the years, greater emphasis and value has been placed on funding for research that is earmarked for publication in scholarly journals. It should be noted that the last time an academic technologist was funded for workshops, seminars, etc., was in the mid-to-late 1990's. The authors continue to develop their technical skills on their own time, without funding, because those skill sets directly affect what they do in the classroom.

3. SURVEY RESULTS

Survey invitations were sent out in July 2007 via email to ACM's Special Interest Group in Computer Science Education (SIGCSE) and to the Association of Information System's AIS World listservs. The survey, which can be found in Appendix B, was open for three weeks and 210 responses were collected.

Seventy-three percent of the respondents were from colleges or universities with graduate degree programs and 25% were from colleges or universities with four-year undergraduate programs. The remainder was either designated as a community/junior college or "other". Sixty-two percent were from public institutions and 38% were from private. The largest group of respondents, thirty-five percent, came from institutions with over 15,000 full time students; twenty-nine percent were from institutions with 5,000 – 15,000 full time students; seventeen percent came from institutions with 2,500 – 5,000 students; and 19% was from institutions with fewer than 2,500 full time students. Ninety-six percent of the respondents were full time faculty with only 4% weighing in as part time. It is interesting to note that the majority of the public institutions offered graduate degrees while the majority of the private institutions offered undergraduate only degrees. Table 2 provides a summary of the university demographic data.

The respondents were nearly evenly represented at all ranks: 29% were Full Professors; 33% were Associate Professors; 26% were Assistant Professors, 11% were Instructor/Lecturers and 1% reported as Adjunct faculty.

When asked which best described their discipline, 45% were from Computer Science. Approximately 22% were from Information Systems; 20% specialized in Management Information Systems, 8% were from Computer Information Systems and 5% chose "other". Other designations included Information Science, Information Technology (IT), Computer Information Technology, IT Leadership, and those who may have shared responsibilities between and among various departments including Engineering. Table 3 provides a summary of respondent faculty demographic data.

The respondents were asked to select all of the courses that they teach from a list of twelve courses. The majority, 58%, chose "other", followed by Management Information Systems (36 %), Systems Analysis & Design (34%), Java programming (32%), Database Management Systems / Database Systems (28%), Web Development / Design (20%), Networking / Data Communications (20%), C++ (16%), e-Commerce / e-Business (16%), HTML programming (12%), Assembly (9%) and COBOL (2%).

The list of selected courses was brief and clearly did not give the respondents enough of a variety of options from which to choose. One respondent complained that the authors' list of courses was, "pretty CIS-biased." It should be noted that all three of the authors are either CS or MIS professors. Given the size of the college and the number and variety of courses offered at the authors' institution, the only bias was toward our collective professional experiences. The small size of our institution and small number of course offerings may have unfortunately biased our list.

Of the 205 who responded to this question, 129 listed the courses they taught that were not included in the survey short list. After doing a content analysis, Algorithms topped the list with 14 respondents followed by Software Engineering with 12. Project Management and Architecture tied at 11 responses; followed by VB, VBA, or VB.net at 10 responses. Operating Systems and Com-

pilers came in at 9 and 8, respectively; Security and HCI were taught by 6 of the respondents; Research Methods, Ethics, and Discrete Math each received 5 responses. Object Oriented, Graphics, and Strategy were taught by 3-4 respondents. Other courses included Statistics, Data Warehousing / Mining, Distributed Systems, Robotics, IT Audit, Policy, Distributed Systems and XML rounded out the list. Table 4 summarizes the data for courses specified in the survey.

When asked if their college, university or department offered an opportunity to apply for annual faculty research and/or development funds (FRD), 86% replied yes, 14% no. Interestingly, in a study of faculty development done 17 years ago, when asked if they received research support from institutional or departmental funds in the past 12-month period, 58% of the respondents replied no and only 42% of the respondents replied yes (Boyer, 1990, Table A-27). Research funding was more prevalent in research and doctoral-granting institutions as compared to comprehensive and liberal arts institutions in the Boyer study.

In our survey for this study, the authors found that the vast majority of funding for faculty development came from internal sources. When asked if their funding came primarily from internal or external sources, approximately 64% were funded from internal sources (within the university, college, department, etc.) and just over 36% were funded primarily by sources external to their institution. Of the internal sources of funding, 76% received funds from the college/university level, 32% from their division/school and approximately 20% from their department. Six percent replied that their funding was from another source, some of which included union-negotiated funding, research centers, endowments, and seed grants; one respondent did not know where the funding came from.

The fact that over 75% of the internal funding comes from college/university-wide resources may have implications on funding for non-traditional development for technology academics. If the culture of the university is geared toward funding traditional research projects and/or if the perceived value of development is in such projects, the probability of funding for other types of technology-related development is low. In addition, if the decision for funding comes from a centralized source where the decision makers do not understand the importance of other types of development for technologists, the probability for funding becomes even lower. For example, in the earlier case example, the college-wide committee is made up of faculty from the liberal arts, social sciences, business, and science & engineering. Given that there are less than 5 computer technologists on campus, the probability of a technologist serving on the committee in any given year is very low[ii]. If the members of the committee do not understand the value of the technologist's development project proposal, or if the *perceived* value is low, it is highly likely that the proposal may not be given the same consideration as research-based proposals. Sources of funding are summarized in Table 5.

When asked which types of proposals were eligible to be funded by FRD grants, the majority, 86%, answered that funding was available for basic or applied research, followed by 73% who stated that funding was provided for pedagogical research. Over 36% of the respondents said that they were entitled to apply for funding for software training classes or seminars, for example, the newest release of an RDBMS, .NET, etc.

The authors wondered if institutions frowned upon funding for technology-related classes or seminars for their technology faculty. The survey participants were asked if their institutions encouraged or discouraged applications for such funding, with the presumption that the preference for funding was toward basic, applied or pedagogical research. Just over half of the respondents replied that their institutions neither encouraged nor discouraged applications for funding of software training classes and/or seminars. Surprisingly, 26% *encouraged* applications for this type of development, while 16% *discouraged* it. It should be noted that 7% did not know how their institution felt about such applications. Questions 11 and 12 are summarized in Table 6.

If just about 37% of the respondents received funding for non-research based development, such as seminars or workshops, then 63% did *not*. It is safe to deduce that these academic technologists are doing the

"non-traditional" or non-research based professional development on their own time, and perhaps with their own funding. Even for those who *did* receive funding for workshops, etc., it is safe to assume that not all of their technical professional development was done with funding and/or course release time. In fact, when asked if they were expected to do professional development on their own time without support from the institution, over three-quarters (78%) of the respondents said yes and 13% said no. Is it safe then to conclude that there is a double standard when comparing professional development requirements across the institution?

When asked if they believed that technology academics should receive FRD funding toward technology seminars, to learn new software tools, software design paradigms, and/or new programming languages, the response was an overwhelming *yes*. Eighty-one percent of those surveyed believed that funds should be made available for this type of professional development, while 19% believed this type of development should not be eligible for funding. Questions 13 and 14 are summarized in Table 7.

It is clear that the participants felt very strongly about funding for these types of activities. Would their opinions be the same when it came to the value of such development activities to the rank, tenure and promotion process? The survey respondents were asked if these types of activities should be considered positive evidence toward promotion and tenure. The overwhelming majority, 73%, believed that they should while 27% of the respondents believed they should not be considered. However, these types of professional activities only counted as positive evidence toward tenure at only 39% of the respondent's institutions.

In the subsequent question, the authors sought to ascertain whether or not there was a perception among technology academics of a double standard; that is, was it perceived that academics in the technology fields are held to different professional development standards than their peers in other areas, for example, the Liberal Arts. Over half of the respondents replied in the affirmative. Twenty-seven percent believed that they are not held to a different standard and almost 22% were uncertain. In our own institution, the authors found that there were research and publication requirements for all disciplines college/university-wide. However, in addition to publishing expectations, technology professors are also required to keep up with the rapid changes in their discipline on their own time and without funding or course release time. Over half of the respondents perceived that they too were held to different standards as compared to other disciplines university-wide. Table 8 summarizes the results of the questions pertaining to tenure and promotion considerations and perceived double standards among disciplines.

4. CONCLUSION

It is clear that faculty development plays an integral role in the lives of the modern day academic. Without it, classroom learning would stagnate and students would clearly suffer as a result. It used to be that "research informs teaching", but that is no longer the case. Faculty *development*, which includes research, must also include other types of professional development to inform teaching. There is agreement among scholars (Bland & Schmitz, 1990; Millis, 1994) that faculty and institutional vitality are dependent on faculty development. According to Bland & Schmitz (1990), "…the vitality of the school depends on a holistic approach to faculty development (as cited in Legorreta, 2006, p. 4). Millis (1994) agrees, "Institutions interested in faculty vitality should look seriously at the nature of faculty development, its rationale, and its effective implementation."

Faculty development does not come in a neat "one-size-fits-all" package. Every institution has its own unique needs, its own culture. Whereby some scholars (Nathan, 1994; Swain, 1994) argue that faculty development plans and funding should be decided at the departmental level, others (McCartney, 1983; Reich, 1994) believe that it should be up to the institution to decide what works for them. For example, in a small institution, the department chair may have little to no influence over how development monies are spent. According to Reich (1994), "…there are many ways to skin this cat called 'faculty development'."

According to DiLorenzo & Heppner (1994), "From the point of view of teaching and re-

search, different types of situations require different skills and resources." Faculty in the technology disciplines clearly require both. While it is still necessary for them to do research, be it basic, applied or pedagogical, they still need to stay current in their field. Institutions of higher learning are funding some of this non-research based development, approximately thirty-seven percent. According to the U.S. Department of Labor (n.d), the fastest areas of job growth will be in Software Engineering and Information Technology, requiring more incentive for technologists to stay current in their fields in order to provide a state of the art education for their students. Eighty-one percent of the survey respondents believed that funding should be available by the institution for technical development. Perhaps 37% is not enough.

Seventy-eight percent of the respondents replied that they were required to self-educate without funding and fifty-one percent perceived that they had different professional development requirements as compared to their contemporaries from across the academy. According to Camblin & Steger (2000), "The assumption has long been that a scholar (i.e., faculty member) would and could easily self-educate to keep abreast of new developments and to maintain high skill levels. To make this presumption today… is to ignore the swiftness at which knowledge and understanding are advancing. For each area of study, the life span for the standard of excellence grows shorter and shorter."

Since development funds are often decided upon by committees of non-technical colleagues, it is important to educate our peers across campus as to the importance of the diversity in the technologist's professional development. This could be done by informal talks at lunch or by submitting more detailed proposals. In order for these types of efforts to grow, a culture change must happen on many campuses across the country. "Development funds have…revitalized professors, renewed courses…the money has also permitted professors to study new subjects that they could then add to the curriculum, benefiting students" (Battistella, 2007).

According to Boyer (1990), "As a scholarly enterprise, teaching begins with what the teacher knows. Those who teach must, above all, be well informed and steeped in the knowledge of their fields" (p. 23). Teaching cannot be informed without informed faculty; this begins with institutional-wide acceptance and support of the need for diversity in the faculty development plans of academic technologists.

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APPENDIX A: TABLES

TABLE 1: THREE-YEAR FACULTY RESEARCH AND DEVELOPMENT GRANT HISTORY

Number	AY 07-08	AY 06-07	AY 05-06
Full time faculty	133	143	138
Proposals submitted	43	29	31
Proposals denied[1]	7	1	0
Total funded	36	28	31
Summer stipends			
@ $2400-$2650	0	17[2]	16[3]
@ $2000	26	0	4
Summer stipends with expenses[4]	0	5	0
Course releases @ $2650	10	6	9
Tuition remission awards	0	0	2
Total amount budgeted	$78,600	$78,300	$78,300
Total amount awarded[5]	$78,500	$78,174	$75,923

1 Denied by FDG Committee or Administration
2 All @ $2650
3 One @ $2400; 2 @ $2500; 13 @ $2600
4 Travel, books, equipment, etc.
5 Excluding FICA

TABLE 2: UNIVERSITY DEMOGRAPHIC DATA—RESPONSE PERCENTAGE

Q1. Description of College/University	All	Graduate Degrees	Undergrad Only	Public	Private
Community/Junior College	1			1	0
Undergraduate 4-yr College or University	25		100	9	16
College/University with Graduate programs	73	100		53	20
Other	1				1
Q2. Public or Private College or University					
Public	62	73	35	100	
Private	38	27	65		100
Q3. Total number of full time students					
Under 2,500	19	6	56	1	18
2,500 – 5,000	17	13	26	7	10
5,000 – 15,000	29	36	9	21	8
Over 15,000	35	45	9	33	2

TABLE 3: FACULTY DEMOGRAPHIC DATA

Q4. Full time or Part time	Response %
Full time	96
Part time	4
Q5. Rank	
Full Professor	29
Associate Professor	33
Assistant Professor	26
Instructor/Lecturer	11
Adjunct	1
Q6. Discipline	
Computer Science	45
Management Information Systems	20
Information Systems	22
Computer Information Systems	8
Other	5

TABLE 4: SUMMARY OF COURSES TAUGHT

Q7. Courses Taught (select all that apply)	Response %
Other	58
Management Information Systems	36
Systems Analysis & Design	34
Java	32
Database Management Systems / Database Systems	28
Web Development / Design	20
Networking / Data Communications	20
C++	16
e-Commerce / e-Business	16
HTML	12
Assembly	9
COBOL	2

TABLE 5: SOURCES OF FACULTY RESEARCH & DEVELOPMENT GRANT FUNDS

Q9. Source of FRD funding	Response %
Internal sources	64
External sources	36
Q10. Sources of internal FRD funding (select all that apply)	
College/University	76
Division/School	32
Department	20
Other	6
Not applicable	6

TABLE 6: TYPES OF PROFESSIONAL DEVELOPMENT FUNDED BY INSTITUTION

Q11. Types of research considered for FRD funding (Choose all that apply)	Response %
Basic or Applied Research	86
Pedagogical Research	73
Software Training Class or Seminar	37
Not applicable	8
Other	8
Q12. Institution encourages technical development	
Neither encourages nor discourages	51
Encourages	26
Discourages	16
Don't know	7

TABLE 7: FACULTY PERCEPTIONS ON TECHNICAL DEVELOPMENT AND FUNDING

Q13. Expectations of development without support (self educate on one's own time)	Response %
Yes	78
No	13
Don't know	6
Other	3
Q14. Should funding be available for technical development	
Yes	81
No	19

TABLE 8: TENURE & PROMOTION CONSIDERATIONS AND PERCEIVED STANDARDS

Q15. Should technical development be considered in tenure & promotion cases	Response %
Yes and it should be	36
Yes but should not be	3
No but should be	37
No and shouldn't be	24
Q16. Different professional development standards for technology academics	
Yes	51
No	27
Uncertain	22

APPENDIX B: FACULTY RESEARCH & DEVELOPMENT FUNDING SURVEY

Much has been written about external funding for academic research and development. The purpose of this survey is to learn more about the internal faculty development grant process, particularly within the ranks of technology academics. Thank you for your willingness to take this brief survey.

1. Which best describes your type of college/university?
- ☐ Community or Junior College
- ☐ Undergraduate four-year College or University
- ☐ College or University with graduate programs
- ☐ Other (please specify)

2. Is your college/university:
- ☐ Public
- ☐ Private

3. What is the size of your college/university (total # of full time students)?
- ☐ Under 2,500
- ☐ 2,500 to 5,000
- ☐ 5,000 to 15,000
- ☐ Over 15,000

4. Are you a full or part time member of your faculty?
- ☐ Full time
- ☐ Part time

5. What is your rank?
- ☐ Full Professor
- ☐ Associate Professor
- ☐ Assistant Professor
- ☐ Instructor/Lecturer
- ☐ Adjunct

6. Which best describes your discipline?
- ☐ Computer Science
- ☐ Management Information Systems
- ☐ Information Systems
- ☐ Computer Information Systems
- ☐ Other (please specify)

7. Which of the following courses do you teach (select all that apply)
- ☐ Database Management Systems / Database Systems
- ☐ Management Information Systems
- ☐ Systems Analysis & Design
- ☐ e-Commerce / e-Business
- ☐ Networking / Data Communications
- ☐ Web Development / Design
- ☐ HTML Programming
- ☐ C++
- ☐ Assembly
- ☐ Java
- ☐ COBOL
- ☐ Other (please specify)

8. Does your college, university or department offer an opportunity to apply for annual faculty research and/or development funds?
- ☐ Yes
- ☐ No

9. Your faculty development and/or research grant monies come *primarily* from:
- ☐External sources (outside of the university)
- ☐Internal sources (inside of the university)

10. Your *internal* funding is provided by your (select all that apply):
- ☐Department
- ☐Division / School
- ☐College / University
- ☐Not applicable
- ☐Other (please specify)

11. You can submit an internal proposal for research / development grant dollars for (select all that apply):
- ☐Basic or Applied Research
- ☐Pedagogical Research
- ☐Software Training Class / Seminar (e.g., newest release of RDBMS, .NET, etc.)
- ☐Not applicable
- ☐Other (please specify)

12. The faculty development grant process at my institution _____ applications for funds for software training, seminars and/or technical seminars.
- ☐Encourages
- ☐Discourages
- ☐Neither encourages or discourages
- ☐Don't know

13. In your opinion, are university technology professors expected to learn new programming languages, the latest software tools and upgrades, etc. on their own time without funding?
- ☐Yes
- ☐No
- ☐Don't know
- ☐Other (please specify)

14. As a technology academic, do you think you should receive Faculty Development monies to take technology seminars, learn new software tools, software design paradigms, new languages, etc.?
☐Yes ☐No

15. Are any of the activities listed in the question above considered positive evidence toward tenure and promotion cases at your college / university?
- ☐Yes and they should be considered as positive evidence for tenure and promotion
- ☐Yes but they should *not* be considered as positive evidence for tenure and promotion
- ☐No but they should be considered as positive evidence for tenure and promotion
- ☐No and they should *not* be considered as positive evidence for tenure and promotion

16. In your opinion, do you believe that technology academics are generally held to different professional development standards compared to their peers in other disciplines, e.g. Liberal Arts?
☐Yes ☐No ☐Uncertain

17. Please briefly describe your internal faculty development grant process:

18. Do you have any additional comments?

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[i] Applications for AY 07-08 are submitted during AY 06-07

[ii] It should be noted in this case that a faculty member cannot serve on the annual grant committee if she/he has personally submitted an application for a grant.