

SPECIAL ARTICLES

A Comprehensive Approach to Faculty Development

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The purpose of this report was to describe the development, implementation, and outcomes from 3 complementary programs to facilitate the development of faculty members. The Faculty Development Committee (FDC) at the University of Tennessee developed 3 new complementary programs: the Individual Faculty Development Program to encourage faculty members to assess and identify their own specific developmental needs; the Seed Research Grant Program to fund scholarly activities by faculty; and the Technology Support Program to foster financial support of technology upgrades crucial for meeting the research, education, and service needs of faculty members. Eighteen faculty members participated in the Individual Faculty Development Program during the first 2 academic years and all provided positive feedback about their experiences. The Seed Research Grant Program funded 6 projects during its inaugural year. Limited outcome data from these 2 programs are extremely favorable relative to grant submissions and publications, and enhanced educational offerings and evaluations. The Technology Support Fund was initiated in the 2005-2006 academic year. The 3 faculty development programs initiated are offered as examples whereby faculty members are given a high degree of self-determination relative to identifying programs that will effectively contribute to their growth as academicians. Other colleges of pharmacy are encouraged to consider similar initiatives to foster individual faculty development at this critical period of growth within academic pharmacy.

Keywords: faculty development, research, technology

INTRODUCTION

The most important resource that any institution of higher education has is its faculty members.¹ As such, faculty development must be considered an essential element in nurturing and supporting this invaluable resource. By enabling faculty members to meet individual goals as teachers, scholars, and leaders, the broader goals and missions of the educational institution are also met.² While the responsibility for such development falls largely on the individual, institutional leaders also bear the moral and professional responsibility to foster the growth of those faculty members they have recruited and hired.³ Establishment of faculty development programs is a particularly important issue within colleges of pharmacy due to the rapid growth in the number of

institutions and a steady influx of junior faculty members in recent years. Flexibility within such programs can also fulfill the purpose of engaging and renewing seasoned faculty members who wish to remain innovative and contributing members of their profession.^{1,4} By facilitating a supportive and invigorating environment for faculty development, the daunting task of faculty recruitment and retention also becomes less formidable.⁴

Faculty development programs vary widely from institution to institution, and encompass both formal and informal offerings. Offerings in a comprehensive faculty development program should include the following focus areas: (1) professional, including individual scholarship; (2) instructional; (3) leadership; and (4) organizational, eg, time management.⁵ These focus areas may be addressed through workshops, seminars, teleconferences, electronic media, mini-courses, mentoring programs, sabbaticals, and directed publications (eg, "survival guides" for junior faculty members). External resources can also be effectively utilized for this purpose (eg, American Association of Colleges of Pharmacy (AACP) *Education Scholar* modular program available via the Internet²). While knowledge and skill-based offerings

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are essential to the growth of individual faculty members, financial resources are also needed to facilitate faculty development. Specifically, monies must be committed for conducting innovative scholarly activities by junior and senior faculty members, as well as for securing and/or upgrading equipment, if optimal faculty growth and performance is to be achieved. Thus, a multifaceted approach to faculty development has been strongly advocated by leaders within the academy.¹

In keeping with the concept of a multifaceted approach to faculty development and the principle that any development should be an individualized process, the Faculty Development Committee of the University of Tennessee College of Pharmacy established 3 complementary programs to facilitate and support the development of its full-time faculty members. These 3 programs are the Individual Faculty Development Program (IFDP), the Research Seed Grant Program (RSGP), and the Technology Support Program (TSP). The purpose of this paper is to describe the development, implementation, and outcomes of these programs.

PROGRAM DESCRIPTION

The Faculty Development Committee is appointed by the Dean of the College and is comprised of 8 full-time faculty members, representing both of the College's academic departments (ie, Pharmacy and Pharmaceutical Sciences). Pursuant to a charge by the Dean in the 2002-2003 academic year, the Committee formally evaluated the effectiveness of existing College faculty development activities. Prior to this time, the majority of College faculty development activities coordinated by the Committee consisted of seminars and short workshops presented to the entire faculty by a variety of invited external and internal speakers. While topic areas were solicited from the faculty, it was the opinion of both the Committee and faculty members that, although these events were informative, they often fell short of meeting the specific development needs of the majority of the attendees. The Committee decided to develop a new strategy that would place the onus to a much larger extent on each faculty member to determine his or her most pressing developmental need. This was based on the assumption that each faculty member not only was in an excellent position to identify this need, but also would be motivated to find a program that would most effectively satisfy the individual developmental need. The centerpiece of this strategy was the development and launching of an initiative known as the Individual Faculty Development Program (Appendix 1). Highlights of this program are that each full-time faculty member has the opportunity to annually submit an IFDP proposal to support personal de-

velopment and growth in 1 of 4 categories: (1) personal development, eg, leadership, communication, technology skill; (2) research skill development; (3) clinical practice skill development, or (4) educational skill development. These categories are not mutually exclusive such that faculty members can submit proposals spanning more than one category. However, only 1 proposal submission is allowed per faculty member each academic year. Proposals are submitted to the Committee, which evaluates the proposals based on formal evaluation criteria (Appendix I) and then recommends to the Dean which proposals should be funded. At least 4 of the 8 Committee members must give a proposal their highest score in order for the proposal to be approved.

Flexibility was a key element in designing the IFDP, and virtually any structured and focused program would be considered if it contributed to the faculty member's developmental need. These included, but were not limited to, skills development workshops, leadership conferences, mini-sabbaticals, writing courses, and instruction in statistical applications and research techniques. The IFDP was not designed to be a "travel fund" per se, although attending workshops or seminars in conjunction with more general professional or scientific meetings was permitted. Furthermore, the monies could not be used as research project "seed grants." This need was addressed through a separate program implemented in the 2004-2005 academic year. Total funding for the IFDP was limited to \$25,000 in 2002-2003, with \$2,500 limits on individual IFDP proposals. In 2004-2005, the total available funding was increased to \$40,000, with \$3,500 limits on individual IFDP proposals.

While the IFDP provides support for individual faculty development and growth, other needs were deemed important by the FDC relative to providing a more comprehensive approach to faculty development. As such, a second initiative known as the Seed Research Grant Program was created to focus on providing support for seed research projects, and was implemented in the 2004-2005 academic year. The purpose of this program is to provide initial funding for small research projects so that faculty members could generate preliminary data to support future applications for extramural funding. This program complements the IFDP by assisting faculty members in developing individual research programs and scholarship (Appendix 2). The expectation of this program is that it will stimulate the faculty members' extramural funding applications, as well as enhance the research skills of new, mid-career, and senior faculty members. Total funding for the Seed Research Grant Program was \$35,000 in 2004-2005, with limits on individual grants of \$10,000. The National Institutes of Health (NIH) grant scoring

method was used for selection of grants within the Seed Research Grant Program (Appendix 2).

The Technology Support Program was the third faculty development program designed by the FDC and was launched in the 2005-2006 academic year. The TSP essentially recognizes the important role that technology plays in supporting faculty members in carrying out the traditional academic triad of education, research, and service. Prior to the development of this program, no College or departmental funds for computers or other technologic needs were available to individual faculty members (with the exception of startup funds for newly employed faculty members). The central thrust of the TSP is that each full-time faculty member will receive \$1,000 every 3 years for technology needs that include, but are not limited to, computer hardware and software, printers, scanners, or any other miscellaneous technology that will improve productivity and performance. This allocation can be supplemented with other funds that may be available to an individual faculty member. Flexibility is again considered to be an important feature of the TSP. Every third year, each faculty member can assess individual technology needs and use the TSP to assist in purchasing technologies that best contribute to meeting those needs. During the 2005-2006 academic year, one third of the 57 full-time faculty members (19 faculty members) will receive TSP funding, for a total cost of \$19,000.

PROGRAM ASSESSMENT

The inaugural offering of the IFDP program in 2003-2004 resulted in 9 full-time faculty members receiving funding totaling \$14,443. Proposals ranged from attendance at focused seminars to completion of a mini-sabbatical to self-directed computer skill development (Table 1). No proposals were deemed unacceptable in the 2003-2004 academic year. In the 2004-2005 academic year, the number of proposals granted remained at 9 with funding totaling \$21,775. A tenth proposal was submitted but not funded because the budget is exclusively for research support and it was determined the project fell outside the program guidelines. Overall, the sophistication of the programs the faculty members outlined in IFDP proposals in the second year of the program increased. This is

Table 1. Individual Faculty Development Program (IFDP) Award Summary, 2003-2005

IFDP Category	No. of Recipients
Personal development	3
Research skill development	12
Clinical skill development	1
Educational skill development	2

likely associated with the increase in the IFDP budget limit from \$2,500 to \$3,500 per proposal. Projects in the second year included attendance at conferences, seminars, workshops, and off-campus courses, as well as completion of a mini-sabbatical.

A requirement of the IFDP was that the faculty member submit a formal report to the Committee following completion of the development program. These reports have universally praised the value of the IFDP program, and particularly the feature that allows participating faculty members to complete programs of their choosing.

In the 2004-2005 academic year, \$35,000 was provided within the Seed Research Grant Program and 6 of 8 submitted proposals were funded. Four of the 6 funded proposals involved animal or translational research techniques (Table 2). One of the other funded proposals was a basic science study, while the remaining proposal was a clinical investigation.

Direct outcomes (ie, “cause and effect”) from the 2 offerings of the IFDP and the single offering of the Seed Research Grant Program are difficult to quantify. Nonetheless, a survey of all faculty recipients of grants from the 2 respective faculty development programs revealed the following self-declared scholarly outcomes: 10 grant submissions (7 NIH grants, 1 industry grant), 1 paper accepted for publication, 5 papers for publication in preparation, and 6 abstracts accepted for publication. Funding received from the grant submissions totaled \$1,020,000, with additional funding in excess of \$4 million pending. Relative to educational outcomes, there has been an expansion of educational content in 2 graduate courses taught within the College as a result of IFDP grants. The dissertation of at least one graduate student has also been impacted by an IFDP grant. Furthermore, 1 faculty member indicated that lessons learned from her IFDP experience resulted in significant improvements in coordinating a didactic course within the College curriculum. She attributes the positive student evaluations of both the course and her individual lectures on the course enhancements, particularly those related to improved clarity in constructing lecture objectives and examination questions more closely matching the stated objectives. Lastly, one faculty member described his clinical practice being affected by improvement and streamlining of the coding for 3 personal digital assistant programs used daily within his practice.

Unless a faculty member made a specific request for funding in the first year, faculty members were randomly assigned to receive the \$1,000 allocation in either the first, second, or third year of the TSP program. Before the TSP was developed, the College expended \$27,720 for the purchase of *Palm Tungsten C* personal digital assistants for all full-time faculty members in 2004-2005. This

Table 2. Seed Research Grant Titles and Award Amounts, 2004-2005

Title of Grant	Amount
“Small Interfering RNA (SiRNA)-based Silencing of Inducible Nitric Oxide Synthase (iNOS) Gene for the Improvement of Syngenic Islet Transplantation”	\$6,000
“Transcriptome Analysis of Listeria Monocytogens During Infections”	\$7,000
“Racial Disparity Trends in Emergency Department Care for Elderly Patients with Femur or Hip Fractures, 1998-2002”	\$3,000
“Evaluation of Cannabinoid Receptor Agonist KM-233 in a Rat Model of LPS-Induced Acute Lung Injury”	\$6,000
“Ontogeny of Hepatic Drug Transporters in Pediatric Liver Biopsies”	\$6,000
“PDR1-Mediated Transcriptional Regulation of Azole Antifungal Resistance in <i>Candida glabrata</i> ”	\$7,000

technology upgrade was made so that faculty members could utilize the wireless technology available on the UT Health Science Center campus in support of delivery of the PharmD curriculum.

DISCUSSION

A taskforce of the AACCP identified 3 major characteristics of effective faculty development programs more than a decade ago. These elements were faculty commitment to the program, flexibility of the program to meet the needs of junior and senior faculty members, and institutional resource commitment. The College has embraced these 3 characteristics by developing and launching the 3 programs described above. Based on the formal feedback from faculty members who received IFDP grants and the number of proposals submitted during the first 2 academic years of its existence, the program has been extremely successful and universally endorsed by the faculty. All requests for IFDP funding meeting the stated criteria of the program were funded. Informal feedback from other College faculty members has been equally supportive. The Seed Research Grant Program was also well received by faculty members in its first offering. Initial response to the TSP has been equally positive. The faculty’s enthusiasm for the strategic blend of development programs offered by the College has led toward attainment of the first characteristic identified by AACCP: faculty commitment. The characteristic of flexibility within the programs was a foundational element in designing each program. Thus, this second characteristic has certainly been cultivated as well. Lastly, through dedicating monies to support these programs over the past 3 years and into the foreseeable future, the College leadership has clearly met the third characteristic outlined by the AACCP task force: institutional resource commitment. The success of the initial 2 faculty development programs, and the third program launched in the 2005-2006 academic year, would not have been realized without strong institutional support and leadership.

While the IFDP, RSGP, and TSP offer a rich blend of opportunities for the development of full-time faculty

members, these programs have limitations. Most notably, as currently designed, the faculty development needs of the College’s part-time faculty members are not being met. Given the importance of part-time faculty members in both didactic and experiential teaching programs, the development of programs to meet the unique needs of this group of faculty members should also be targeted. Furthermore, the ongoing success of these or similar programs will require a sustained financial commitment from each respective institution. This may limit the ability of other colleges of pharmacy to replicate these initiatives in whole or in part. The need for an objective and ongoing longitudinal assessment of outcomes from the programs described is also needed. Such an assessment would undoubtedly entail regularly surveying faculty recipients of the various grants to determine the direct and indirect outcomes on teaching performance, research productivity, leadership opportunities, and patient care activities.¹ While the outcome data presented appears to be extremely promising, no baseline data are available to fully evaluate the impact of the IFDP and RSGP compared with the previous approach to faculty development. Plans for further follow-up assessment of the contribution of all 3 programs to achieving the College’s mission and goals are currently underway. Lastly, although the successes of the programs at the College have been highlighted, other areas within the realm of faculty development should not be overlooked or ignored. For example, informal and/or formal mentoring of junior faculty members should be an integral component of any faculty development effort within a given institution.^{1,6}

Faculty development has been deemed a priority within the University of Tennessee College of Pharmacy. The development and implementation of 3 complementary faculty development programs (IFDP, RSGP, and TSP) are strong evidence of this institutional commitment. Other colleges of pharmacy are encouraged to consider establishment of these programs or similar initiatives to foster faculty development.

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Appendix 1. Proposal Format and Evaluation Criteria

I. Proposal Format

- A. Faculty member’s Name, Title, and Department
- B. Title(s) and date(s) of Development Program (attach any published promotional material related to the program)
- C. Proposal
 1. Rationale for selecting particular program or activity
 2. Statement of the specific faculty development need(s) and how the program will satisfy the stated need(s). These statements should be explicitly related to the IFDP development categories.
- D. Expected outcome(s) from participation in the program (eg, self, department, College of Pharmacy, University, students).
- E. Itemized Budget
 1. Typical categories of expenses include registration, lodging, car or air fare, meal per diem, minor supplies
 2. Maximum amount of the award is \$3,500.
 3. Identify the source of additional funding if the amount exceeds \$3,500. Documentation of availability of additional funding should be provided.
 4. All funds must be expended within the academic year.
- F. Letter of Support from Departmental Chair (submit as an attachment). This letter should contain an explicit statement that adequate professional leave time is available to complete outlined program or activity.

II. Evaluation Criteria

IFDP Grant Criteria	Rubric*	Score
1. Program focuses on skill development (versus knowledge review)	0 1 2 3 4 5	
2. Extent that the program focuses on the stated need(s)	0 1 2 3 4 5	
3. Rationale for selecting the program	0 1 2 3 4 5	
4. Relevance to academic interests	0 1 2 3 4 5	
5. Expected outcome from participation in the program or activity	0 1 2 3 4 5	
6. Appropriateness of the budget categories	0 3 5	
7. Recipient of an IFDP grant in the past year	-10	N/A
8. Recipient of an IFDP grant in the past 2 years	-5	N/A
9. Non-conformance to proposal length	-5	N/A
Total Score (maximum of 30)		
10. Does the program address 1 of the 4 allowable areas of development?		Yes No
11. If the program’s cost exceeds \$3,500, is the source of additional funding described and available?		Yes No N/A

*Key: 0 = unable to assess, 5 = highest score, n/a = not applicable

Appendix 2. Seed Research Grant Program Proposal Format and Evaluation Criteria

II. Proposal format

1. Title
2. Proposal summary
3. Major funding possibility (These new initiatives should ideally lead to extramural grants.)
4. Timeline for schedule to possible future funding
5. NIH bio-sketch (including other support)
6. Budget (\$10,000 limit)
7. Budget justification (Funds can be used for items such as supplies, animals, service fees, attendance at research meetings, i.e. there are few restrictions on the categories)

III. Evaluation Criteria (Note: NIH scoring will be used for evaluation of proposals).

1. Scientific merit
2. Likelihood of future funding
3. Investigator productivity
4. Encouragement of new investigators
5. Encouragement of new areas of investigation