



Institutional and Faculty Roles and Responsibilities in the Emerging Environment of University-wide Interdisciplinary Research Structures:

Report of the 2001/2002 Research and Graduate Affairs Committee

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The AACP by-laws state that the Research and Graduate Affairs Committee (RGAC) is to provide assistance to the Association in developing its research, graduate education, and scholarship agenda. This assistance may include facilitating colleges and schools in formulating and advancing legislative and regulatory initiatives and nurturing collaborative activities with organizations sharing an interest in issues related to the pharmaceutical sciences.

The following charges were given to the 2001-2002 RGAC by AACP President Milap A. Nahata regarding emerging institutional models for supporting graduate education and research in the pharmaceutical sciences. President Nahata charged the committee as follows:

Consider the impact of increasing external financial support of interdisciplinary research, the establishment of university-wide research centers and institutes, and the loss of traditional departmentally-based graduate programs on the quality of graduate education and the pharmaceutical sciences research enterprise in colleges and schools of pharmacy. What impact will these trends have on the recruitment, financial support, and eventual careers of graduate students in the pharmaceutical sciences? What impact will the movement towards interdisciplinary research have on the promotion and tenure of faculty in colleges and schools of pharmacy that expect non-tenured faculty to demonstrate "independence" in their research activities? Suggest strategies and actions for AACP and its member institutions to undertake in order to maximize opportunities for faculty research and graduate education in this new environment.

The committee charge contains several statements about national trends in graduate education and research as a function of an evolutionary university and college structure. They include the following:

- There is an increase in external financial support of interdisciplinary research.
- There is an increase in the establishment of university-wide research programs and institutes.
- There will be a relative decline in departmentally-based graduate programs.
- The increase in university-wide research programs will have an impact on the promotion and tenure policies and practices in colleges and schools of pharmacy.

The committee examined these statements, discussed potential approaches to dealing positively with these emerging national trends, and made suggestions for colleges and schools of pharmacy to consider in context to what is happening on their own campuses. Throughout this report, the term, pharmaceutical science refers to all pharmacy faculty-related research, independent of departmental designation.

Background

The Structure of Institutional Centers, Institutes, Laboratories, and Programs

A sample of AACP members' Web sites provides examples of a large variety of centers, institutes, laboratories, and programs along with the traditional descriptions of professional and graduate degree programs. It becomes immediately apparent that a universal definition of a center, institute, laboratory, or program is lacking across campuses, although there may be differentiation on a particular campus. These structures have the common distinction of claiming to bring a collaborative focus to a particular area of research (e.g., Center for Drug Discovery) or a specific disease (e.g., Cancer Center). Centers, institutes, laboratories, and programs can be either within or among academic units in structure and membership. These structures are of two distinct types. The first consists only of college/school faculty, either from one or more departments.¹ The second type, and the primary focus of this report, is that which includes faculty from different colleges and schools across campus.

Institutional Programs: The structures of primary concern to the committee, the centers, institutes, laboratories, and programs with faculty participation from several administrative units, will henceforth be referred to as Institutional Programs (IPs). IPs have an increasing complexity of structure and function, and understanding this differentiation is important in attempting to assess their impact on graduate education and research within our colleges/schools. The University of Minnesota Academic Health Center (UMAHC) has developed a useful five-stage classification to differentiate the breadth and structure of IPs.⁽¹⁾ The five stages of the Minnesota IP model progress in institutional recognition and specifically in commitment of institutional resources (e.g., space, financial support, personnel). The UMAHC structure is as follows:

Type 1: Provides an identity to an IP effort. This may be for the purposes of fund raising through grants, foundations, private donations, along with program recognition, or attraction of faculty collaborators. Extra institutional resources are not committed, nor are any particular administrative or governance structure required. This model expresses institutional recognition of the IP's focus area as important, but provides little else. A director must be named and a plan submitted for approval of an appropriate

¹ College/school programs, referred to as small "c's" or centers, can have positive benefits if there is general agreement by the faculty that the center offers the college/school opportunities for research or teaching beyond the traditional departmental structure. The formation of such centers should follow a set of guidelines developed and approved by the college/school's administration and/or faculty governance structure. Adding a center to an existing college/school administrative structure should result in expanded or synergistic opportunities for collaborative research, teaching, or service, not as a mechanism for bypassing existing departmental leadership or faculty governance.

university official. A type 1 program might begin as a college/school program and evolve into an IP program with the addition of interested faculty from one or more institutional units.

Type 2: Provides coordination to the efforts of a group of faculty in a particular research field. This IP could provide for communication among the group (e.g. ListServ), provide a voice for the group within a larger university structure to request equipment and resources, or provide input for faculty recruitment, in addition to the activities listed above under the Type 1 structure. The annual institutional resources committed would be small, such as seminar and administrative support. A director must be named, but a formal governance structure is not required. Space might be provided for administrative support if necessary. Approval of the formation of a Type 2 structure is required from the appropriate university officials.

Type 3: Provides infrastructure support functions needed by a group of faculty with shared education, research, or service/clinical interests and generally occupying contiguous space. A Type 3 program would have assigned space, a formalized administrative structure, including a director appointed or approved by the appropriate university official. The institutional resources committed would be moderate and used to supply administrative support and shared equipment. Visible activities of this IP level may include collaborative degree programs, and/or multi-disciplinary training grants. A Type 3 structure would also incorporate the functions supported by the Type 1 and 2 programs.

Type 4: Provides a programmatic base to some of the participating faculty who view the program as their principal academic home. Faculty may have formal joint appointments between their tenure-granting department and the program, including shared salary allocations between the department and program. Additional administrative functions of a Type 4 program may include grants administration and accounting and assigned academic responsibilities. A Type 4 program would not be the primary tenure-granting unit for any faculty member, but would have formal input into the tenure/promotion process. A Type 4 program incorporates all the elements of the previous three program types into its structure.

Type 5: Provides a department equivalent, with the exception that some faculty might have appointments in different colleges/schools. A Type 5 program would have the ability to grant tenure and provide the entire infrastructure to support faculty that a department normally would provide.

IPs may exist that are not completely described by the UMAHC designations, however these five types of IPs provide a model for understanding the complexity and diversity of these structures. Important features of the Minnesota guidelines to be noted are the requirements of appointing a director and obtaining approval from an appropriate university official for all five types of structures.

Increase in University-wide Research Programs and Institutional Programs

The Association of Academic Health Centers released a report, "Trends in the Research Enterprise of Academic Health Centers," in December 2001.(2) The report was a compilation of a survey completed by CEOs of academic health centers (AHCs) on the research enterprise at their institutions, the funding of that enterprise, and its desired outcomes. The 75 respondents were from both private and public institutions, but the majority were those from state university-affiliated AHCs. A selection of the summary highlights of the AHC report follows:

Almost all AHCs are expanding their research enterprise with an increase in federal (NIH) and state funding being major incentives.

University and state recognition and prestige remain significant motivating factors to expand the research enterprise.

Structures and organizations are changing to accommodate the increased emphasis on research including support for technology transfer, intellectual property, and commercialization, research parks, incubators, and institutes.

Universities are nurturing research and business to create biotechnology sectors in their local and/or regional areas. State and local officials are pressing economic development through concomitant industry partnerships and the commercialization of university research.

Industry is playing a significant role as a source of funding for research ventures and as a source of partnerships, alliances, and collaborations.

Although the large increases in the NIH budget over the past five years have provided a strong incentive for an expanded university biomedical research enterprise, much of the expansion in centers and institutes is being financed by specially-allocated state appropriations, tobacco settlement funds, institutional fund raising activities, industry funds, and reallocation of internal university funds, the latter often obtained through a budget or personnel “tax” on individual colleges and schools. Legislatures are looking to their state universities to be an engine of economic development, particularly in biotechnology-driven industries that are viewed as substitutes for the labor-intensive manufacturing industries that have closed or moved to lower wage localities.(3)

In addition to its roles of stimulating interdisciplinary research, IPs provides a mechanism for university administrators to invest in expensive but necessary research infrastructure (e.g., laboratory/animal facilities, instrumentation) in a single high visibility location, rather than scattered in departments around campus. This in turn, provides opportunities for large gift fund raising and a means to garner indirect costs from colleges/schools to help pay for the IP infrastructure. In the slow, deliberative department-focused academic environment, IPs may appear to the university administration as a means to react quickly to rapid advances in science and technology (i.e., genomics, proteomics) and focus financial and faculty resources in research areas that have a high potential for funding and results, particularly those with commercial development opportunities. The movement away from college or school-based programs to intercollegiate or university-based programs appears to be a national trend and may, in fact, be “inevitable.”

The Coalescence of Academic Disciplines in the Biomedical and Pharmaceutical Sciences

The terms, interdisciplinary and multidisciplinary are often used interchangeably, and their concomitant use is not uncommon. Both terms refer to making use of more than two *distinct* academic disciplines to accomplish a task or solve a problem. In the not-too-distant past, a faculty member’s academic discipline was defined by his/her academic department affiliation and disciplinary science association (e.g., ASPET, APS) membership. Within the biosciences, departments have either disappeared or been supplemented by more multi-disciplinary research structures such as neurosciences, cellular/molecular biology, and genomics with or without graduate education program components, often supported by a Program Project Grant (e.g., P01, P50) and/or Training Grant (T32). Conversely, having an existing IP may increase the probability of successfully obtaining a Program Project Grant or Training Grant. Interdisciplinary Training Grants often have long lives, and can serve an infrastructure role for an interdisciplinary program.

Society membership as an identifying feature of academic discipline has also evolved in several directions. One direction is membership in a larger multi-disciplinary scientific community that encompasses both basic and applied researchers of an organ system or disease (e.g., HIV/AIDS, neurosciences). The other direction is identification with a smaller special interest group that focuses on a

specific aspect of the larger organ system or disease, or alternatively on a technique that has use across organ system or disease research, often at the molecular level. Faculty identification with an academic discipline is more often through membership in a scientific organization than an academic department. Thus, bioscience and some of the pharmaceutical sciences have evolved toward an interdisciplinary structure, or a “nondisciplinary” structure, with individual researchers identifying with groups of other scientists who share a common interest in an organ system, disease, technique/instrumentation or who are focused on solving specific public health problems. Many colleges and schools of pharmacy have either renamed or combined pharmaceutical sciences departments to reflect the increasing biological research focus of faculty. The disappearance of traditional bioscience academic disciplines or departments is also reflected in the reorganization activities of the NIH’s Center for Scientific Review, responsible for the review of most NIH research proposals.(4)

In view of the disappearance of distinction among bioscience disciplines, what disciplines are distinct enough from the biosciences to provide an interdisciplinary research approach? Quoting from a National Institute of General Medical Sciences (NIGMS) Program Announcement (PA) on Supplements for the Study of Complex Biological Systems, “. . .these (complex) problems reflect the traditional interests of the quantitative disciplines such as mathematics, chemistry, physics, engineering, and computer science.”(5) The inclusion of more quantitative disciplines such as the chemistry, physics, and the computational sciences as important components of interdisciplinary research and graduate training programs was also the focus of the Burroughs Wellcome Fund’s (BWF) “Institutional Awards at the Scientific Interface” program.(6) The BWF committed a total of \$10 million to these five-year awards, one of which was obtained by the Graduate Program in Quantitative Biology, with major participation by University of California-San Francisco School of Pharmacy faculty.(7) The pharmaceutical sciences include medicinal chemistry, and areas of pharmaceuticals anchored in physical chemistry and engineering, with a strong emphasis on mathematics and modeling. Thus, some pharmaceutical sciences faculty are particularly attractive as potential participants in the interdisciplinary bioscience research movement which looks to incorporate scientists with skills in physical-chemical measurement techniques, mathematical modeling, and large database structure and analysis.

Although the primary mission of most IPs is research, an increasing number assist graduate education through the centralization of graduate student recruitment and support for the first one or two years of graduate education. If departments continue to consolidate into research focus areas, IPs may assume more and more graduate education responsibilities, including recruitment, instruction, and financial support of graduate students until the degree is awarded. Alternatively, after IP recruitment and a year or two of financial support, the graduate student selects a research advisor, and receives his/her Ph.D. degree from the college/school where the advisor holds his/her academic appointment. In both these situations, the focus of individual faculty members and departments will shift from student recruitment to student attraction into their research programs. Alternatively, an IP in a “hot” research area could serve as a major competitor for graduate students to department faculty who are not involved in any IP structure.

The Philosophical and Financial Support of Interdisciplinary and Collaborative Research

Philosophical and sustained financial support for an IP is critical to its success. Occasionally, an IP is formed as a result of effective “lobbying” from a small but vocal group of faculty or administrative advocates. The result is an incomplete, poorly thought-out organizational structure, lacking in adequate resources and the advocates to survive when the inevitable budget or scholarly criticisms surface to challenge the IP’s existence. The withdrawal of resources and support then leaves an administrative structure, but without programmatic substance, and eventual termination.

To succeed, an IP needs a sufficient number of committed advocates, and few detractors within the university. A primary cause of failure of most start-up businesses is insufficient capital investment to

carry the business concept through start-up and rapid initial growth, until income generated exceeds total costs of operation for a sustained period of time. For a new business or product concept the investment is termed venture capital, informing the potential investor that there is a risk of losing their investment. To convince the investor, the idea must be marketed, using a well-designed business plan that provides potential investors with how their financial support will be expended, and what the expected outcome will be and when it is expected to occur, in order that investor support is not prematurely removed. IP formation must be approached in a similar fashion. The return on investment may not only be income (e.g., indirect costs), but could also include graduate students, postdoctoral fellows, patents, publications, or donations to the university to support the IP venture. Like a business venture, the expected outcomes and the timeline required achieving those outcomes should be a requirement in the IP business plan.

External financial support for IPs appears to be increasing, based upon statements encouraging multi- or interdisciplinary approaches to the complex public health problems needing solutions in many of the weekly Requests for Application (RFA) and Program Announcements (PA) in the *NIH Guide*. Existing NIH grant mechanisms that specifically promote inter-, multidisciplinary, and collaborative research include the Interactive Research Project Grants (IRPG), Program Project Grants (P01), Center Grants (P50), Cooperative Agreements (U01, U54), and administrative supplements to funded individual research grants for adding collaborators with “quantitative skills.”(5,8,9) The National Institute of General Medical Sciences (NIGMS) has introduced small and large “glue” grants (R24, U54) to facilitate collaborative and interactive activities among NIH funded investigators at different academic institutions and the industry for the purpose of forming research teams to solve complex biological problems.(10,11) The large glue grant RFA states, “Many scientists are now expressing a strong need for a type of support that will encourage scientific collaboration and provide for a higher level of coordination to solve problems requiring multifaceted approaches.”

Other pertinent examples of interdisciplinary and intrainstitutional research activities are the constituent programs sponsored by the NIH’s National Center for Research Resources Institutional Development Award Program (IDeA).(12) The IDeA Biomedical Research Infrastructure Networks (BRIN) and Centers for Biomedical Research Excellence (COBRE) programs have the goal of building research infrastructure and investigator competitiveness in institutions located in 23 states which have had a historically low aggregate success rate for NIH applications. BRIN and COBRE accomplish these goals through the support of collaborative research partnerships within and among campuses in the IDeA states. Several colleges/schools of pharmacy have taken a leadership and active participation role in funded BRIN and COBRE programs during the past several years.(13)

Thus, it would appear that a major shift from the focus on the individual investigator approach to an interdisciplinary/collaborative approach to biomedical research is emerging. Is this shift in philosophy supported by a shift in funding? For fiscal years (FY) 1997-2001, the number and amount awarded for individual research projects (R01) increased approximately 36 percent and 67 percent, respectively, in close parallel to the increase in the extramural research budget. The number and amount awarded to large grants (P01, P50, U01, U54) over this period increased approximately 39 percent and 87 percent, respectively.(14) Within NIGMS, the major funding institute for the pharmaceutical sciences, the number and amount for R01s increased 25 percent and 50 percent, respectively, while the number and amount of large grants increased 60 percent and 279 percent, respectively.² The majority of this dramatic increase in large grants occurred in FYs 2000 and 2001, as the NIH budget was significantly increased as part of the Congressional intent to double the budget from 1998-2003. It is impossible to predict whether Congressional support for increasing the NIH budget with double-digit increases will continue, but it is

² Personal Communication: James B. Onken, Ph.D., Assistant Director for Resource Allocation and Analysis, Division of Extramural Activities, National Institute of General Medical Sciences, 45 Center Drive MSC 6200, Bethesda, MD 20892-6200, April 5, 2002.

not premature to suggest that the bioscience research supported by the NIH is becoming more collaborative.

The major NIH extramural funding mechanism remains the individual investigator grant (R01, R03, R21), but the need for multiple areas of expertise and technical skill to solve significant research problems does not reside in one principal investigator (PI). Therefore, individual investigator grant proposals often rely on others to contribute to the research effort, either as consultants, or co-investigators. This increase in the number of collaborators or co-PIs may be contributing to the ever-increasing size of R01 grants. Unfortunately, NIH only “credits” the award to one PI, which causes the untoward side effects of both underestimating the frequency of and discouraging interdisciplinary or collaborative research. Faculty who are not listed as the PI on an NIH award, yet contribute significantly to the proposal and the results of the research generated, may go unrecognized as independent investigators, negatively influencing their efforts for promotion and tenure. This, in turn, could lead to reluctance by new faculty to become involved in collaborative research efforts. It is doubtful whether NIH will or can change the “winner-take-all” designation of a single PI on research awards. Therefore, colleges, schools, and universities must address this issue, if the movement away from disciplinary-based graduate education and research and towards interdisciplinary and collaborative research continues.

In summary, there is a definite movement toward interdisciplinary, collaborative research that is being externally driven by the nature of bioscience research, and funding agencies that are interested in supporting collaborative approaches to “big” research problems. Internally, interdisciplinary research is being driven by faculty who are seeking collaborators throughout the university community who can contribute to solving important research problems and/or assist them in obtaining significant external funding support, administrators who view them as potential tools for changing the institution’s academic culture, and by state governments through investment in infrastructure (e.g., buildings, equipment) and faculty resources whose primary motive for this investment is to generate potential economic returns (e.g., patents, products) for the university and supporting state government. Major government funding agencies are philosophically-supportive of collaborative research, but the mechanism for funding this type of research does not recognize the difficulty facing new investigators who must prove that they are “independent investigators” before they can obtain tenure or promotion in most academic institutions.

Challenges and Recommendations for Colleges and Schools of Pharmacy

The Commission on the Future of Graduate Education in the Pharmaceutical Sciences recommended:

Pharmaceutical sciences faculty are encouraged to engage in multi- or interdisciplinary research and graduate training programs within their own institution and with other faculty within the university. Pharmaceutical sciences faculty need to be more proactive in proposing and organizing interdisciplinary institution-based and campus-wide research programs, centers, or institutes, despite the possibility that the majority of faculty participants may not be from the college or school of pharmacy.(15)

The RGAC agreed and expanded this recommendation to include pharmacy faculty who may be involved in any and all IPs, including teaching improvement (research) centers, public health/service/policy institutes, and continuing education centers. IPs can provide an excellent education and training environment for both graduate students and postdoctoral fellows, by expanding available graduate-level course offerings and research infrastructure (e.g., equipment, patients, data analysis expertise, etc.). However, colleges/schools must be aware of the potential problems associated with the growth in IPs and develop strategies, policies, and guidelines for both faculty and graduate students that are appropriate for their institution in context with the entire university’s policy on IP formation and administration. Some of the issues that should be addressed by colleges and schools of pharmacy include:

Colleges/schools must develop a philosophy with regard to rewarding faculty for participation in collaborative scholarship and IP membership, in addition to their performance of college/school and departmental responsibilities. This includes issues such as relative value of co-PI status on grants/contracts, multi-authored publications, and IP teaching outside of regular college/school instructional responsibilities. An established and agreed upon philosophy is also important in those cases where the benefits to faculty participation in an IP may not be translated to the school or department. For example, a faculty member may have the choice of submitting a grant through the IP or the school/department. The IP may offer faculty a more attractive infrastructure for conducting research, or full or partial return of indirect costs to principal investigators, while the school/department may not. Thus, schools/departments may be placed in a position of “competing” for their own faculty, and conversely, faculty may be placed in a position of choosing between their primary appointment unit (which awards tenure), and their secondary appointment unit (which offers attractive perquisites).

Deans must insure that individual faculty participation in an IP is consistent with the overall mission of the institution so that faculty can place their efforts into activities that are valued by the administrative unit that provides promotion, tenure, and salary increases within the university structure. In addition to written policy and procedures, it is equally important to keep open lines of communication that allow analysis faculty activities on a case-by-case basis. Increasingly, the Department Chair is assuming a more critical role in dealing with faculty who may make appointments in his/her department and IP. The leadership of the Department Chair in an IP growth environment is a critical and challenging issue in pharmacy education.

The college/school must assess its research strengths and weaknesses (i.e., uniqueness) and should develop and/or strengthen a unique research focus of the faculty that would provide the institution a competitive advantage in its IP participation. The qualifications of new college/school faculty may have to be evaluated both from the point-of-view of departmental needs and those of the IP in which faculty will be participating.

New faculty members with high research productivity potential are often attracted to the possibility of becoming a member of an IP. If they are recruited by the college/school for the purpose of having membership in an IP, it is extremely important that the college/school and IP have agreements in place for issues such as sharing salary, promotion and tenure expectations, intellectual property revenues if any, indirect costs from faculty grants, research support “credit,” teaching responsibilities of the faculty in the professional, departmental graduate program, and IP program, if any, and graduate student support and space.

Pharmaceutical sciences faculty have often played a major role in the development of research focus areas that are attractive to other university faculty, particularly those in larger units like the medical school. When this occurs, pharmacy’s role can change quickly from innovator to spectator, as the faculty and financial resources available to a medical school to staff an IP are so much greater than those in pharmacy. This quantitative superiority can only be offset by the quality of pharmacy faculty involved in the IP. Although quantitatively outnumbered, many pharmacy faculty have maintained a leadership role in IPs, even though they are a small fraction of the membership. Support from the college/school’s administration and faculty colleagues are extremely important to those pharmacy faculty playing important roles in an IP.

Mentorship of new faculty who will serve as both members of the pharmacy faculty and an IP is particularly important to ensure that the faculty member has every opportunity to obtain tenure and/or promotion in his/her academic “home.”

Some IPs have the ability to recruit and appoint faculty. IP faculty may not have tenure-track appointments, but recurring appointments that may be dependent upon measures of research productivity or by their ability to generate partial support of their annual salaries (i.e., research professors). These IP research faculty may be interested in joint or adjunct appointments with academic departments in order to teach or supervise graduate students if those activities are not a function of their IP. Colleges/schools should have procedures in place to respond to these IP faculty requests that are consistent across the institution. The appropriate individuals in the college/school, the IP, and the faculty member must agree to joint appointment expectations.

Institutions must have definitive guidelines for graduate student enrollment and support when the student's faculty research advisor has appointments in both a department with a recognized graduate degree program and an IP with the authority to award, enroll, and grant graduate degrees.

IPs are generally initiated with an exclusive research focus, with teaching and service viewed as "extracurricular-type" activities. A potential conflict-of-commitment can be created between the IP and college/school, when IP faculty have their tenure-track appointment in a department or college/school. Those faculty who want to focus solely on research and eschew teaching, will find IPs very friendly places, until time comes for promotion and tenure decisions, and their college/school has major responsibilities for teaching. Tenure tract faculty, particularly new faculty, must be made aware that annual evaluation, salary adjustments, tenure, promotion, teaching assignments, and staff support are generally made, with input, by their department or college/school, even though an IP may provide all or some space, travel support, and other research support.

College/school programs

Although college/school programs were not the primary focus of the committee, it was recognized that these structures, small "c's," could play a significant role in the development of an interdisciplinary research focus within a college/school. Additionally, these collaborations can provide the focus for the development of inter- or multidisciplinary structures involving faculty from academic units across the university. Therefore colleges/school administrators/faculty should prospectively address potential issues arising from the formation of small "c's within their institutions:

Guidelines should be developed that address "c" membership, public relations, fund raising, reporting responsibility, administrative support, space, and financial support, if any, at a minimum. If there is cross-departmental faculty involvement, guidelines regarding center involvement in promotion and tenure decisions should be clearly stated in writing.

There must be a clear management structure, no different than a department or equivalent office (e.g., office of academic services). Budget management, indirect cost recovery, salary savings policy, and graduate student support should all be agreed upon and put into writing.

The role(s) of the Department Chair and Center Director, if different, must be defined, since they will likely be responsible for management of some of the same people and space. Unless their relationship and responsibilities are very clear, faculty may be confused regarding their relationships with the center and the department.

Conclusions

There are many positive effects of the IP movement on university campuses, including new sources of research support, faculty positions, infrastructure, and the excitement that accompanies research and collaborating with creative individuals. In some institutions, IPs are replacing traditional departmental

collegiate structures through consolidation of existing programs and are offering interdisciplinary graduate program tracks. In most institutions however, the IP structure is being overlaid upon an existing departmental structure, so faculty can have an academic department appointment with or without an IP appointment, or an IP appointment, with or without a joint or adjunct departmental appointment. It is this more common arrangement that has raised concerns of faculty unit commitment, loyalty, promotion and tenure decisions, indirect cost assignment, space and equipment accessibility, graduate student assignments, teaching responsibilities, etc. In this multi-appointment environment, colleges/schools must develop policies, guidelines, and especially a philosophy of IP involvement that is approved by the university administration, and openly and frequently shared with existing faculty and those being recruited for roles in both the college/school and an IP.

IPs, like traditional academic departments, have the potential to be divisive or collaborative, resulting in conflicts or synergies. There is nothing inherently good or bad about them. However, IPs are a rapidly growing administrative mechanism developed for the purpose of assisting the university add regional economic development through focused research upon its existing multiple missions of teaching, research, and service. If IPs have a clear and distinctive mission and effective administration, they can provide potential synergies to the existing units of the university. Conversely, IPs can produce significant disruptions to college/school administration/faculty relations unless appropriate proactive steps are taken to prevent them from occurring.

Recommendations for AACP

AACP should consider programming for faculty and administrators on the increasing role IPs are having on research, teaching, and service responsibilities of pharmacy faculty, particularly those with dual appointments in the college/school of pharmacy and on university-wide IP.

AACP should encourage its members to share their specific policies and procedures regarding appointments, space allocations, financial support, and evaluation and tenure procedures for faculty who hold appointments within the college/school and an IP. This could be accomplished through the posting of such documents on the AACP Web site.

Future AACP leadership programs should include a substantive discussion of the impact of the growth of IPs on faculty recruitment, appointment, retention, commitment, and evaluation within the college/school of pharmacy.

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BRIN (<http://www.news.uri.edu/releases/html/01-1212.html>) and COBRE (<http://www2.kumc.edu/cobre>, <http://www.cas.umt.edu/draft/mnif/history.htm>, <http://www.ndsu.nodak.edu/cobre>, <http://uwadmnweb.uwyo.edu/cardio-cobre>) programs with pharmacy college/school participation.

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