Report of the Indiana University School of Medicine

Mentoring Task Force

August 2009

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Chair's Preface

In my initial discussions with the Dean's Office regarding the work of the Task Force, I had imagined a Task Force product or deliverable that would resemble a *Manual of Best Practices in Academic Mentoring*. Indeed, the charge to the Task Force requested an accounting of best practices and "information about how to prepare mentors and mentees as well as address issues of reward, compensation, and administrative support." Those responsible for commissioning the work of the Task Force also may have imagined an instruction manual that could be readily disseminated to Departments and individuals interested in improving their expertise and accountability in mentoring. Notably, the report of the Task Force does not resemble an instruction manual. Rather, the report more closely resembles a diagnosis followed by an initial treatment recommendation. The Task Force has concluded that the current problems with academic mentoring at the IU School of Medicine are largely systems-level issues. Given this diagnosis, instruction manuals may be necessary but they are wholly insufficient to address the need to improve academic mentoring at the School of Medicine.

The Task Force membership included faculty with decades of commitment to the mission of the IU School of Medicine. Taken in sum, these faculty account for literally hundreds of years of professional experience at this institution. This longitudinal history includes not only experience both as mentors and as mentees, but prior experience with committees, task forces, and strategic planning teams as well as day-to-day work in research, education, clinical care, and administration. These experiences result in a deep understanding of the power of institutional culture and the importance of the context in which mentoring relationships exists. Given these experiences, it is not surprising that the committee diagnosed the problems with mentoring as analogous to the problems of the canary in the coalmine. The academic environment for mentoring is at risk due to by-products of other institutional activities and priorities. The decline in mentoring is an early, albeit not singular, symptom of a deteriorating academic environment.

It is well beyond the scope of this Task Force to detail or suggest remedies for these environmental changes. Obvious contributors include the accelerating priority of clinical care and clinical care revenues as well as the competition for extramural funding and the general loss of margin for scholarly activity time, professional development, and educational activities. Inherent in this loss of margin is a movement toward an increasingly detailed and financial accounting of faculty time. This practical change alone has precipitated a subtle movement in some aspects of the academic environment from a social exchange to a market exchange. As suggested by Ariely in *Predictably Irrational:*

> So we live in two worlds: one characterized by social exchanges and the other characterized by market exchanges. And we apply different norms to these two kinds of relationships. Moreover, introducing market norms into social exchanges, as we have seen, violates the social norms and hurts the relationships. Once this type of mistake has been committed, recovering a social relationship is difficult. Once you've offered to pay for the delightful Thanksgiving dinner, your mother-in-law will remember the incident for years to come.

In short, the Task Force concluded very early that the environment for mentoring within the academic medical center has fundamentally changed and we will not be returning to the prior world. Given these practical contextual realities, the Task Force focused on incremental actions that the Institution might take in order to communicate that improved academic mentoring is an institutional priority. Chief among these action items is the Institutional assumption of responsibility for improving the mentoring environment. This is anticipated to include increased resources and support for academic mentoring at the level of the Institution.

There are perhaps some other surprises in the findings of the Task Force as listed below in no particular order of importance.

1. It is difficult to underestimate the complexity and diversity of the IU School of Medicine faculty. This is meant to highlight not so much issues of race, gender, or ethnicity but fundamental differences in professional roles, responsibilities, duties, rewards, and day-to-day activities. Any given faculty member might share more in common with a professional in another industry than he or she does with the faculty member in the office next door or a faculty member with the same title.
2. There is an important mismatch between faculty expectations and institutional expectations for many faculty members regarding such fundamental issues as professional roles, responsibilities, duties, rewards, and day-to-day activities. These incongruent expectations appear to be especially problematic for the heterogeneous group of faculty subsumed under the title “clinician-educator”.
3. It is not particularly difficult to produce a consensus list of best practices in academic mentoring. However, such lists are largely platitudes in the absence of system-level changes to support change in behavior at the level of Departments or individuals.
4. Within the School of Medicine community, there are current and vibrant examples of best practices in academic mentoring. Thus, it is clearly possible to construct micro-environments conducive to mentoring even with the contextual upheavals noted earlier.
5. Within the School of Medicine community, there is an appetite for instruction and resources and models that would help Departments and individuals improve mentoring.
6. The Task Force believes that it would be possible to build from the available local examples of best practices in academic mentoring and thereby incrementally expand the number of faculty members who have access to such best practices.

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Executive Summary

Introduction

The Office of Faculty Affairs and Professional Development (OFAPD) conducted a faculty vitality and needs assessment in 2006. Nearly 40% of the IUSM faculty responders strongly agreed that mentoring is highly important to academic vitality yet one in four of these faculty reported they do not have a mentor. Given this finding, OFAPD empanelled a task force to "address the need for increased mentoring for faculty at IUSM."

Methods

The IUSM Mentoring Task Force completed its charge in four phases including: (1) a systematic literature review to identify best practices in mentoring at academic medical centers; (2) local and national interviews to identify best practices in mentoring for basic science, clinician-researcher, and clinician-educator faculty; (3) a review of the characteristics of the current IUSM faculty and an open email invitation to solicit comments from these faculty; and (4) discussion of findings from the first three phases in group meetings of the Task Force. These discussions were followed by preparation of draft recommendations from working groups on: (a) basic science; (b) clinician-researcher; and (c) clinician-educator faculty.

Results

The extant literature strongly supports the importance of mentoring in the development of a vibrant and productive faculty at academic medical centers. The literature also supports a role for the institution in supporting mentoring activities, including training mentors and mentees. Although the IUSM has already made significant progress in the development of an institutional infrastructure for mentoring, more can be done. There is a continued perception that few faculty are cognizant of OFAPD resources and a persistent myth that few faculty access or value these resources. However, in 2008-2009, 40% of the IUSM faculty had at least one contact with OFAPD programming. This early success suggests that OFAPD might provide new and more focused programming in the area of skill development for academic mentoring. Local interviews with IUSM faculty revealed a wide range of experiences with mentoring in the current environment. Interviewees report experiences ranging from state-of-the-art, wonderfully productive mentoring relationships to non-productive and even destructive relationships. The Task Force also noted the heterogeneity of the faculty in terms of characteristics such as gender, race, campus, department, rank, track, or status as full-time, part-time, or affiliate. This heterogeneity highlights the need to tailor mentoring activities to individual faculty. National and local sources of expertise on mentoring provide a relatively consistent view of the components of best practices in mentoring. There is general consensus that institutional leadership and resources can help achieve a more widespread and even adoption of best practices. Thus, while mentoring must be tailored to the individual, institutions can do much to improve the likelihood that faculty get the right mentoring at the right time.

Conclusions

The Task Force on Mentoring concluded that an institutional mandate dictating the required components of all mentoring programs across all Departments would be unwelcome. However, the Task Force also concluded that the IUSM could better serve the needs of mentors and mentored-faculty through Institutional (centralized) initiatives that would complement Departmental (local) efforts. The Task Force recommends six initial action items that represent incremental steps toward improving the quality of mentoring at the IUSM. The Task Force further recommends a long-term commitment to continuous quality improvement in this area by establishing responsibility, authority, and new resources for institutional leadership in mentoring within the OFAPD.

Charge to the Task Force

The Office of Faculty Affairs and Professional Development (OFAPD) was established to help develop a vibrant, diverse community where each faculty member has the optimal capability to make meaningful contributions to their career goals and the institution's mission. In an effort to organize this work, OFAPD conducted a needs assessment. One of the issues that emerged from the needs assessment was a great unmet need for mentoring of all faculty regardless of rank or position. As a result of this unmet need, The Indiana University School of Medicine (IUSM) formed a mentoring task force to study the issue of mentoring at IUSM. This group was charged with:

1. cataloguing current effective mentoring practices at IUSM,
2. investigating effective mentoring programs at other academic medical centers and at IUPUI/IU,
3. reviewing literature in faculty development generally and faculty development in academic medicine specifically to determine best practices in mentoring programs and,
4. proposing a plan to address the need for increased mentoring for faculty at IUSM. This plan should include information about how to prepare mentors and mentees as well as address issues of reward, compensation, and administrative support.
5. reporting their findings and recommendations to the dean of the School of Medicine in the spring of 2009

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Introduction

The Indiana University School of Medicine (IUSM) Office of Faculty Affairs and Professional Development (OFAPD) conducted a faculty vitality and needs assessment in 2006.[1] Nearly 40% of the IUSM faculty responders strongly agreed that mentoring is highly important to academic vitality yet one in four of these faculty reported they do not have a mentor. Other items related to mentoring were also rated as highly important including access to: a professional network, career planning, and a faculty development program. These findings provided the rationale for the IUSM Mentoring Task Force. The four questions addressed in this Introduction provide background for the work of the Task Force.

1. *What is the definition of mentoring?*
2. *What conclusions have other recent local or national task forces reached relevant to mentoring at academic medical centers?*
3. *What is the pool of IUSM Faculty who might be potential benefactors of mentoring?*
4. *What is the OFAPD already providing in support of mentoring?*

1. What is the definition of mentoring?

The committee did not deliberate on the single most appropriate definition of mentoring or on the appropriate characteristics, roles, and relationships that might or might not be encompassed by the notion of mentoring. Many (highly overlapping) definitions are available in the literature with some features that are nearly universal. The mentor-mentee relationship is nearly always identified as a two-way relationship that must provide benefits for both parties. The relationship is most often between a more senior faculty member and a more junior faculty member but peer-to-peer mentoring is also recognized as important. The goals of the mentoring relationship nearly always encompass professional development. Finally, the content of the mentoring relationship typically changes over time and a faculty member may have multiple mentors whose mentorship relationships may be defined differently across mentors. For these reasons, academic mentoring perhaps is best defined with broad terms. Healy and Welchert define the mentorship-mentee dyad as "a dynamic, reciprocal relationship in a work environment between an advanced career incumbent (mentor) and a beginner (protégé) aimed at promoting the development of both."[2] Tobin defined a mentor as: "an older academician who takes a special interest in a younger person—a fellow or a junior member of faculty."[3]

Berk and colleagues described 12 characteristics of an effective mentor as summarized in Table 1 below.[4]

Table 1. Twelve Characteristics of the Effective Mentor [4]

• Accessible	• Provides professional direction (networking)
• Professional integrity	• Answers questions satisfactorily (timely, clear, comprehensive)
• Content expertise relevant to mentee	
• Approachable	• Acknowledges mentee's contributions
• Supportive and encouraging	• Suggests resources, including other people
• Provides constructive & useful critiques	• Challenges to extend abilities (risk-taking)
• Motivates mentee to improve work product	

Tobin identified seven roles for a mentor: teacher, sponsor, advisor, agent, role model, coach, and confidante.[3] Again, multiple, overlapping lists of putative important characteristics and potential roles can be found in the literature. Similarly, several sources attempt to separate

mentoring roles from the assessment, direction, management, or regulation afforded by direct supervisors such as program directors, Division Chiefs, or Department Chairs. Finally, most treatises on mentoring note that the mentored scientist also assumes roles and responsibilities, including a commitment to an academic career and responsibilities to the mentor(s).[5]

2. *What conclusions have other recent local or national task forces reached relevant to mentoring at academic medical centers?*

Mentoring has been identified as a crucial ingredient for academic success by multiple local and national organizations, committees, and task forces. The issue is not so much whether mentorship is important but how best to deliver it in a consistent, timely, and quality fashion. There also appears to be general agreement that the institution should play a role in facilitating mentoring. The quotations below provide examples of the conclusions of other local and national task forces and committees.

From the Report of the Association of Academic Medical Centers Task Force II on Clinical Research (2006)[6]

"Because of the complex nature and regulatory requirements of translational and clinical research, junior faculty must receive effective, individually-focused mentoring from experienced senior faculty, and this should be overseen by the institution."

From the Report of the IUSM Research Review Task Force (January 2007)

"Objective 6: Targeted Faculty Development Efforts
Critical Success Factor 6.1: Programs must be targeted to faculty at various career stages.
Action Plan 6.1(A) [junior faculty]: Encourage small group mentoring
Action Plan 6.1(B) [junior faculty]: Skill development courses at the School level
Action Plan 6.1(C) [senior faculty]: Individual and early intervention by Chairs
Action Plan 6.1(D) [senior faculty]: Career counseling available"
"We must do a better job of attracting, encouraging, supporting, sustaining and retaining our outstanding research faculty."

From the Journal of the American Medical Association (September 2007)[5]

"The literature contains numerous reports on the importance of mentorship in helping facilitate the future success of trainees, documenting benefits such as more productive research careers, greater career satisfaction, better preparation in making career decisions, networking within a profession, and aiding in stress management."

From the Association of Professors of Medicine Physician-Scientist Initiative Recommendations for Revitalizing the Nation's Physician-Scientist Workforce (2007)[7]

"Major changes should be made to the contemporary approach to mentoring physician-scientists."
"The success of physician-scientists today requires institutionally mandated, career-long, multidimensional guidance and support by teams of skilled mentors who contribute dedicated effort to this activity. Institutions should create and implement formalized mentoring programs for physician-scientists that incorporate several contemporary facets.

- *Mentees may require team-based mentoring by groups of mentors who have complementary skills and insights into various aspects of a physician-scientist career.*

- *Institutions should organize multi-generational mentoring groups to acknowledge and reconcile the striking generational differences in attitudes toward work-life balance and controllable lifestyles.*
- *Institutions should ensure that mentors reflect the diversity of the workforce and that mentors are trained in approaches to mentoring junior faculty of different genders, races, and ethnicities. Mentoring programs should include formalized training in career negotiation and tracks, grant writing and management, and presentations and publications as well as scientific guidance.*
- *Institutions should provide formalized training in mentoring skills for mentors and establish evaluation systems to ensure effective mentoring.*
- *Mentors should receive financial support commensurate with professional effort from the institution and/or granting agency."*

From the IUSM Department of Medicine Research Training Task Force (October 2008)

"Provide explicit guidelines for mentorship and mentorship committees."

From the Journal of the American Medical Association (November 2008)[8]

"Medical schools and residency and fellowship programs are charged with training health care professionals and with advancing clinical care, research, and education. Mentoring has been considered to be a core component of the duties of medical school faculty to facilitate successful fulfillment of this academic mission. It has been recognized as a catalyst for career success, and mentoring relationships have been cited as important in facilitating career selection, advancement, and productivity. However, mentor-mentee relationships are challenged by increased clinical, research, and administrative demands. Moreover, mentorship is often undervalued by academic institutions."

From the IUSM Report on Flexibility in the Tenure Clock (December 2008)[9]

"Faculty on the [non-tenure clinical track] accounted by approximately 25.5% of the total faculty in 1999-2000; by 2007-2008, this proportion has risen to 38% of the total faculty."
"With this rise in clinical faculty, …departments and schools have developed faculty productivity expectations based on such issues as the amount of 'revenue-generating activity'. Such expectations are not directly reflected in promotion and tenure criteria; yet, this work is both typical of a clinical faculty member's daily work life, and is essential to the operation of the medical school. Thus, for many faculty members, hiring expectations and their major contributions are not aligned with traditional expectations for academic advancement."

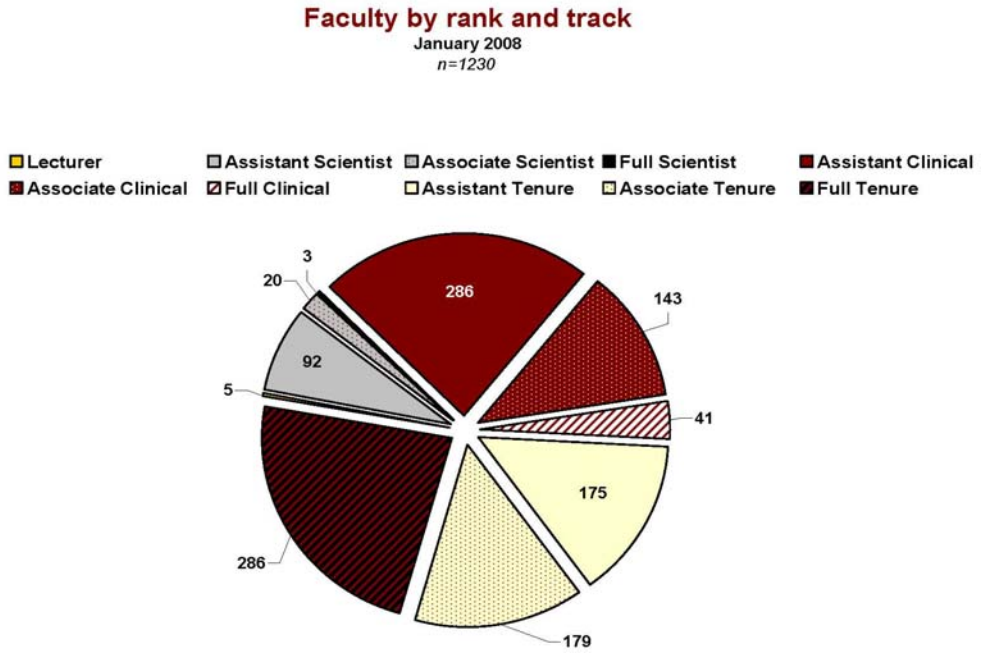
While the excerpt from the Tenure Clock Flexibility report does not explicitly mention mentoring, this IUSM Task Force did recognize the special challenge of academic development within the growing cadre of clinician-scientists. As will be seen later in this report, clinician-scientists represent a particularly heterogeneous group of faculty whose mentoring needs are variable and who are at high risk for a mismatch between personal and institutional expectations.

3. What is the pool of IUSM Faculty who might be potential benefactors of mentoring?

The OFAPD "State of the Faculty Report 2008" provides a wealth of information on the IUSM faculty.[10] Of particular note, there are about 1500 faculty members of whom 1225 (80%) are full time faculty. Approximately 31% of the IUSM faculty are women. Less than 5% of the full time faculty are Black, Hispanic/ Latino, Native American, or Pacific Islander. IUSM faculty are located on nine campuses and some of these campuses may include associations with other universities in addition to IU.

In addition to a geographic distribution across the state, IUSM faculty are distributed across 31 different Departments or Centers. The size of these departments varies considerably. For example, the six largest departments (Medicine, Pediatrics, Surgery, Radiology, Pathology, and Psychiatry) together have more total faculty than the other 25 departments combined. All of these smaller 25 departments have fewer than 50 full time faculty. The Department of Medicine (233) and the Department of Pediatrics (189) are the only departments with greater than 100 faculty. The Division of General Internal Medicine and Geriatrics within the Department of Medicine is larger than most Departments in the School of Medicine with over 100 faculty in this Division alone. Notably, the clinical, educational, and research activities also vary by Department as does the role of individual faculty members within these departments. Furthermore, many of the larger Departments are divided into smaller Divisions or Centers and faculty may have appointments across multiple Divisions, Departments, or Centers. Finally, faculty within the same Department may be located in offices distributed across campus or across multiple campuses or health care systems.

The number of tenure track faculty in the IUSM has realized little growth (+3.5%) over the past decade while the number of clinical track faculty has grown dramatically (+100%). However, there continue to be more tenure track (640) than clinical track (470) or scientist track faculty (115). The figure below shows the distribution of faculty by rank and track.[10]



The very brief summary of the IUSM faculty above demonstrates the heterogeneity of our faculty and organizational structures. Unfortunately, descriptors such as gender, race, campus, department, rank, track, or status as full-time, part-time, or affiliate are poor indicators of who desires or requires mentoring and what type of mentoring they might require. The heterogeneity of the faculty and range of departments portends the importance of "tailored mentoring". While the heterogeneity of the IUSM faculty may highlight the importance of individualized mentoring, it does not negate the potential role of the institution. There are likely components of mentoring (and professional development) that represent common needs across all faculty members and there are likely sub groups that might benefit from special institutional efforts to improve mentoring. Put another way, one size will not fit all but we need a better mechanism to match individual faculty with excellent mentors and professional development resources.

4. What is the OFAPD already providing in support of mentoring?

The OFAPD is organized around four activities including faculty development, diversity affairs, advancement of women, and faculty affairs. The OFAPD is represented in the IUSM leadership at the level of an Executive Associate Dean and the office includes an additional 12 faculty and staff. The OFAPD leadership group includes five Assistant Deans.

The IUSM has and continues to invest in faculty development and mentoring at the institutional level. In addressing the specific charge to the IUSM Mentoring Task Force, one must recognize that the IUSM is not starting from a level of zero activity. The OFAPD has realized a consistent growth in faculty, staff, and resources over the past five years. These increased resources have been accompanied by new programming that has been designed, implemented, and evaluated through ongoing needs assessments. Among other activities the OFAPD performs needs assessments through surveys and individual faculty interviews, organizes workshops on promotion and tenure, grant writing, research laboratory development, and leadership development, assists in recruitment and retention of diverse faculty, facilitates the growth of the Women's Advisory Council, and provides individual or group consultation for professional or organizational development. The OFAPD also hosts a web page where these activities are advertised and materials are posted such as the faculty surveys (www.faculty.medicine.iu.edu).

Despite this growth and development, there is a continued perception that few faculty are cognizant of these resources and a persistent myth that few faculty access or value these resources. Data collected by the OFAPD offer a different picture. In 2008-2009, nearly 600 faculty had 850 contacts with OFAPD programming. This number approaches 1 in 2 faculty members and represents a 400% increase in contacts over a five year period. Furthermore, 70% of the contacts were made by assistant and associate professors while full professors accounted for an additional 12% of contacts. Post-contact surveys demonstrate that the programming offered by OFAPD have been rated a valuable to participants.

Another myth is that most faculty come into contact with the OFAPD due to disciplinary problems, litigation, arbitration, or other remediation or mediation problems. The OFAPD estimates that such intercessions represent less than 10-15%% of their efforts and resources.

Despite the impressive growth, the OFAPD recognizes that too many faculty and too many faculty leaders are unaware of the OFAPD services, that penetration within individual departments varies widely, and that too many faculty find their way onto the IUSM faculty without a basic understanding of their responsibilities, expectations, resources, and roles as an IUSM faculty member. Currently, there is:

- No formal institutional programming to facilitate mentoring within the IUSM
- No registry of senior mentors
- No institutional programming to train mentors or mentees in roles and responsibilities
- No direct financial support or reward to senior faculty members who serve as mentors
- No requirement that any subgroup of faculty must have a mentor
- No evaluation process for the effectiveness of mentors
- No minimum enforced standard for orientation and training of new faculty members

Some or many of these mentoring resources may be available in any given department or center or may be provided through the resources of an individual senior faculty or via the OFAPD. However, these services are not consistently available at an Institutional level.

Methods

Setting

The IUSM Mentoring Task Force conducted its work primarily through telecommunications. There was no face-to-face meeting where all of the Task Force members attended in person. There were two meetings where a quorum of Task Force members attended in person, several meetings among smaller working groups, and numerous one-on-one interactions among either Task Force members or a Task Force member and an interviewee. The work of the Task Force took place from January 2009 to June 2009.

Data Collection

Phase 1

Dr. Callahan and staff in the Regenstrief Institute, Inc. conducted a systematic review of the medical literature. Articles were catalogued in an Endnote database including the article abstract where available. Each article was reviewed to determine its relevance to the work of the Task Force and to ascertain if other relevant articles or books were cited in the bibliography. Highly relevant articles were then distributed to the Task Force membership and Dr. Callahan prepared an overall synthesis of the literature. In addition, Dr. Bogdewic requested examples of institutional mentoring programs or relevant literature through an AAMC listserv.

Phase 2

The IUSM Mentoring Task Force met to discuss the literature review and to discuss best practices from personal experience. These discussions led to an early conclusion that there would be no single “best practice” applicable to all Departments, Centers, or faculty. Rather, the group imagined a menu of effective practices. The group also determined that they would like more specific information from the general faculty about effective or ineffective mentoring practices at IUSM. Based on these discussions, the Task Force resolved to re-organize into three Working Groups to represent the needs of (a) tenure-track basic science research faculty; (b) clinician-researchers; and (c) clinician-educators. Each of these Working Groups was charged with providing a written summary of the:

- elements of effective mentoring practices locally as determined by interviews of local mentors and mentored-scientists
- elements of effective mentoring practices nationally as determined by interviews of the leadership of relevant national programs
- draft recommendations for improving mentoring in the IUSM for their targeted group

Phase 3

In order to assure an open process of data collection given the limited number of interviews that could be accomplished in Phase 2, an email invitation was sent to all faculty members in the IUSM as indicated below:

"We are writing to you to invite your comments about your experience with mentoring at the Indiana University School of Medicine (IUSM). We welcome all comments and suggestions from all faculty members. You can send written comments by email … or you can request a telephone interview, or you can send your comments anonymously through campus mail…"

Specific questions suggested in the email are shown below.

What is the experience of mentorship that you have received?
Were there any barriers or facilitators to identifying a mentor?
Have you served as a mentor and what barriers or facilitators to mentoring have you identified?
What mentorship strategies would you recommend be implemented at the IUSM?

Phase 4

Data from the literature review, email responses and interviews, and working group interviews and summary documents were made available to all Task Force members and discussed at a second meeting of the full Task Force. These primary data plus the draft summary recommendations from the three working groups and the distilled comments from the larger group discussions were used to prepare this report.

Results

Very Brief Overview of Extant Literature

The literature review yielded 84 references including journal articles, monographs, and books that are specifically relevant to faculty mentoring at academic medical centers. The extant literature is primarily descriptive. The literature is not replete with actual data and before-after studies or short-term longitudinal cohort studies focusing on outcomes such as participants' satisfaction are the norm among those reporting outcomes. The published literature contains numerous implicit and explicit assumptions. Some of these assumptions are supported by data and most appear to represent good common-sense conclusions based on the accumulated experience of a wide variety of commentators.

Assumption #1

Faculty members at academic medical centers who have access to excellent mentors enjoy more successful, productive, and fulfilling careers than faculty without mentors. Academic medical centers with a greater number of faculty members who are successful, productive, and fulfilled enjoy greater success than academic medical centers with fewer such faculty.

Assumption #2

Mentoring relationships are necessary not only for the successful transference of skills, knowledge, and expertise but also for the transmittal of professionalism and related qualities.

Assumption #3

Both the mentor and the mentored-scientist seek mentoring relationships. Senior faculty members derive professional satisfaction through their roles as mentors. Mentored-scientists improve their success in professional development through their access to senior mentors. The mentoring relationship takes place over an extended period of time (measured in years) and the nature of the relationship evolves and matures over time. Mentoring relationships may end.

Assumption #4

Over the past several decades, the likelihood that mentoring relationships will develop spontaneously has declined. This is true because of increasing time pressures, increasing demands from of other academic roles, and increasing fragmentation of the academic medical center into specialized units. The pressures of these demands have begun to outweigh altruistic instincts and the risk to benefit ratio of mentoring relationships appears to be less favorable. This is believed to be a vicious cycle, however, as the lack of mentored-scientists and declining ranks of junior faculty paradoxically increases the demands on the senior faculty and decreases their professional satisfaction. This unfortunate situation then results in the decline of faculty vitality and the decline of the institution.

Assumption #5

Mentoring skills can be taught, mentoring relationships can be facilitated, and the environment of successful mentoring can be improved through institutional efforts. The mentoring relationships engineered through institutional efforts will be as effective as those occurring spontaneously. Therefore, institutions should assess their current success at mentoring and put processes in place that will facilitate successful mentoring relationships. Because such institutional initiatives require resources, the success of these efforts should be measured. Qualities of successful mentors can be measured and the qualities of successful mentees can be measured and the success of the mentoring relationship can be measured.

The extant literature can be summarized in five groups: (a) editorials or reviews on the importance, art, or history of mentoring; (b) review articles on the key qualities of mentors, mentored-scientists, or mentoring relationships; (c) descriptions of institutional initiatives with little or no evaluation results; and (d) descriptions of outcomes of institutional initiatives; and (e) qualitative studies describing attributes of successful mentoring relationships from the perspective of experienced mentors or mentored-scientists. Another way to group articles is whether the intent of the report is to target the individual mentoring relationship or whether the target is the institutional efforts to support such relationships.

A recent meta-analysis review identified 39 studies evaluating the impact of mentoring on career choices and academic advancement among medical students, residents, fellows, and faculty physicians.[8] The authors concluded that, despite the perceived importance of mentoring, the literature provides little evidence-based guidance on effective mentoring strategies. Most of the published literature can be summarized as cross-sectional reports on fewer than 200 subjects with outcomes focused primarily on satisfaction. For the most part, “how-to” reports are written from the perspective of experienced mentors or program developers rather than from the perspective of data or controlled studies.

The concept of mentoring practices has undergone some relatively recent revision, albeit in academic circles outside of the medical center. In a recent report from the “New Teacher Center” at UC-Santa Cruz, the notion of “induction” was presented.[11] Induction is conceived as moving well beyond orientation to a more formal process of acculturation to the profession. In addition to induction, other newer strategies for state-of-the-art mentoring programs included:

1. Carefully selecting mentors based on the qualities of an effective mentor rather than simply choosing based on seniority or availability;
2. Providing for ongoing professional development and institutional support for the mentors;
3. Providing sanctioned time for mentor-mentee interactions;
4. Supporting multi-year mentoring relationships;
5. Use specific data and specific criteria to guide the mentee's development and improvement;
6. Opportunities for group mentoring or group professional development on common needs such as writing, time management, or conflict management;
7. Clarify induction and orientation role of central administration as opposed to mentors
8. Collaborative mentoring with other stakeholders rather than isolated relationships

Much of the available literature is duplicative particularly with regard to the qualities of effective mentors, mentees, or mentoring relationships. Many of the articles we identified in our own search are reports on programs in nursing, dentistry, pharmacy, or other health-related schools. Others focus exclusively on subsets of mentored-scientists such as women, minorities, or teachers. Moving outside of Medline to other electronic databases of journals or to the internet identifies a host of other print publications but rarely are these focused on faculty at academic medical centers.

To get a sense of best practices in industries outside of academic medicine, Dr. Callahan interviewed the leadership of a local consultant group (*Career Consultants Group, Indianapolis IN*). This consultant group and others like it have experience in talent development locally for large law firms and the life sciences industry, for example. It can be concluded from this interview that many industries invest considerable resources and enlist data-driven processes to identify employees with "high potential". Once identified, these industries use institutional resources and structures to develop these "hi-po" candidates into future leaders. Identification as a "hi-po" is widely regarded as a coveted badge of credibility. Notably, these practices have been instituted in industries whose size exceeds that of the IUSM faculty so the practices are scalable given appropriate resources.

Summary of Email Responses

We received approximately 115 emails in response to the email invitation. Of these, ~10 were focused on the vertical mentoring program for medical students and were not further considered; ~30 requested a telephone interview and ~75 sent email comments about their mentoring experience. Roughly half of the email responses were negative and half were positive. Within this rough characterization, there was a wide range of responses ranging from strongly negative comments suggesting destructive and absent mentoring relationships to strongly positive comments suggesting lifelong friendships and collaborations. Among the respondents requesting interviews, the majority were senior faculty. Many of these interviews provided examples of best practices locally. Taken alone, one would conclude from the email responses that mentoring is often excellent when it happens but the prevalence of excellent mentoring is patchy at best from an institutional perspective. We can conclude that there are faculty who are falling between the cracks who would have benefitted from better mentoring. We can also conclude that despite excellent mentoring, some faculty will fail and some perhaps need to be counseled much earlier (and at lower cost) to pursue other careers.

Several of the interviewed junior or senior faculty identified IUSM mentors (or programs) who have adopted many of the best practices recognized in the literature. The

committee's interview and survey protocol was not designed to identify the current cadre of excellent mentors at IUSM. However, it would be possible to identify a group of "master" mentors based on information provided by colleagues or mentored-faculty or through other data. For example, according to the NIH CRISP database, there are currently five IUSM faculty with K24 "Midcareer Investigator Awards in Patient-Oriented Research". The purpose of these awards is to "provide support for clinician investigators to allow them protected time to devote to patient-oriented research and to act as research mentors primarily for clinical residents, clinical fellows and/or junior clinical faculty." There are approximately 35 junior faculty at IUSM receiving NIH support through mentored award (K01, K08, K23, etc). In addition, a K12 award at the IUSM is now incorporated in the Indiana CTSI. K-series mentored awards require the identification of a mentor and a professional development plan. There are approximately 15 IUSM faculty who sponsor T32 or T35 programs supported by the NIH. The T32 program "supports broad and fundamental, early-stage graduate research training." The objectives of the T35 program are to "develop or enhance research training opportunities for individuals interested in careers in biomedical, behavioral and clinical research. The program may also be used to support other types of predoctoral and postdoctoral training."

The examples above are not meant to be a comprehensive accounting of all faculty or institutional resources at IUSM that might be relevant to mentoring. However, coupled with the OFAPD programming described earlier, it is evident that islands of excellent resources are already available on campus to support mentoring. In addition, there are islands of excellent expertise in the area of academic mentoring. While such resources are good news, the fact that these resources are relatively small relative to the campus needs raises a disturbing point identified by some of the interviewed faculty. Even excellent mentors with excellent resources can be reduced to mediocrity through over-extension. For this reason, institutional efforts to expand access to mentorship must recognize the limits of any single mentor and design programs that might help extend the reach and impact of our limited resources. Provision of resources to faculty who cannot benefit from the resource (or who do not wish to participate or commit) is an example of poor allocation decisions. Thus efforts to develop and retain junior faculty must also include efforts to develop and retain senior faculty.

Additional Points Raised in Discussions among the IUSM Mentoring Task Force Members

1. *Mentoring should be separated from assessment.*
   The Mentoring Task Force discussed the difference between "mentoring" and "assessment". Formal assessment, supervisory, or disciplinary activities were not felt to be part of the typical mentoring relationship. Mentors clearly have a role in helping the mentored faculty member to self-assess or to understand the assessment criteria or to develop strategies to obtain regular assessment if it is lacking, but these mentors probably cannot serve as both coach and supervisor. It was noted that, in addition to the tenure and promotion committees, other assessors already in play include Department Chairs, Division Chief, and Center Directors, for example, as well as clinical program leaders. Thus assessment should be kept separate from mentoring.
2. *Mentors have an inherent position of power in the mentoring relationship.*
   Several Task Force members warned that Institutional activities to promote mentoring should carefully avoid placing additional powers within the realm of the mentors.
3. *"One size fits all" mentoring mandates from the School of Medicine are unwelcome.*
   Given the heterogeneity of the faculty and their Departments, there was a consensus among the Task Force that a menu of tools and activities from which individuals or program could choose would be more desirable than overly structured approaches.

Summary Comments from the Three Working Groups

Comments from the Three Working Groups were constructed at the end of the data collection process so that these comments encompass early discussions, the literature review, email comments and faculty interviews. Interviews include those stimulated by the email invitation as well as internal and external interviewees identified by members of the working groups.

Summary of findings of the Working Group on Tenure-track Basic Science Research Faculty

Overall, the most common "best practices" can be listed as follows:

1. Establishment of formal mentoring committees consisting of at least two faculty
2. Holding regular meetings between the mentor and mentored faculty member (at least twice per year)
3. Availability of mentors at critical times other than the formal meeting times
4. Mentoring goes beyond help on manuscripts and grants, but also includes feedback on teaching/lectures, service opportunities and dossier preparation.
5. Active participation of the junior faculty member in other mentoring programs that are school- and/or institution-wide.
6. Having a formal, written mentoring plan with the responsibilities of the mentors and junior faculty members clearly spelled out.
7. A clear sense that the mentors have a vested interest in the success of the junior faculty member.

What did not work or were viewed as negatives?

1. For some, the meetings with their mentors were limited and focused on a few items related to dossier preparation, for example (but nothing else and no follow up).
2. A single, assigned mentor who did not have an active research program.
3. A sense that assigned mentors were "forced" to mentor junior faculty. The response of mentored faculty to this form of mentoring was, "if you're not into it, just don't do it".
4. When the responsibilities are mostly on the shoulders of the junior faculty member (some considered this to be a plus, however). An important point here is that some faculty simply do not know how to be mentored. Thus, as indicated below, some education is needed for the mentored faculty members as well as the mentors.
5. Assuming that the junior faculty member knows what to ask for and when they need help on a particular issue.
6. Posting of the mentoring committee meeting minutes (or entire discussion) in the junior faculty member's file; this can potentially discourage a frank discussion during those meetings.
7. Expecting the junior faculty member to know whom to choose for a mentor (e.g., from a department's promotion and tenure committee).
8. Narrow focus on a specific outcome: "just publish more and bring in more grant dollars."
9. Being contradictory in the advice given.
10. No formal mentoring for Associate and Full Professors.

Not all of the basic science faculty are PhDs and some PhD faculty reside in clinical departments. There are a number of varied formal (and informal) mentoring programs. Given this diversity and contrasting levels of success, it is clear that one size does not fit all. Finally, mentoring is really a two-way street. The mentoring is only as good as the mentors and the junior faculty, and the efforts each puts into that relationship.

Summary of findings of the Working Group on Clinician-Educators

A. Clinician-educators are heterogeneous

The title of clinician-educator comprises a range of roles and responsibilities that are not well captured by this title. Within this heterogeneity lies a great deal of territory for misunderstandings about expectations. When expectations align with role and responsibilities, any of the flavors of clinician-educator can represent a rewarding and satisfying career.

B. Unlike clinician-researchers, the presumption of a need for mentoring for all clinician-educators is less clear.

Consistent with the variation in career activities, the level of mentoring among the interviewed clinician-educators is heterogeneous. Within the interviewed faculty are responses ranging from: No, I never had a mentor but didn't need one." to those who had formal mentoring teams. Thus, we could conclude that variation in intensity of mentoring among clinician-educators is probably reasonable; it is perceived as unreasonable if the intensity does not match the perceived need.

C. Different flavors of mentoring

The term mentoring means different things to different people and this may partially explain the varying perceived need among clinician-educators as discussed above. There is also a varying perception about the appropriate or expected roles of mentor and mentee, the requirement for, or lack thereof for mutual gain, and the duration of the relationship.

D. An interest in more structure, but little appetite for assigned mentors

In terms of the role of the University or School, there appears to be a strong consensus that assigned mentors would be a bad idea. However, providing potential mentees with the invitation, push, skill set, and infrastructure to shop for mentors would be welcomed.

E. Heterogeneity in mentors and mentoring

Several of the clinician-educator faculty who had successfully identified a mentor encountered academically successful senior faculty who were not necessarily effective mentors. Some mentors report junior faculty who purport to harbor a passion for pursuing an academic career but instead continually make decisions counter to such a career.

Recommendations for Best Practices for Clinician-Educators

1. Clarify which clinician-educators would benefit from what type of mentoring relationship, if any. This may be an important first step in clarifying expectations.
2. Design a training program that provides clinician-educators with the skill set to shop for a mentor and develop an effective relationship with a mentor.
3. Design a training program that provides mentors of clinician-educators with the skill set to select a mentee and develop an effective relationship with the mentored faculty.
4. Centralize some of the functions of mentoring and developing mentoring skill sets within a School of Medicine program.
5. Allow individual programs to customize their mentorship programs on top of the minimum requirements set by the central program but require programs to provide some minimum amount of mentoring structure.
6. Set benchmarks that allow programs to judge the progress of the mentoring program and individual mentored faculty.
7. Provide some mechanism of reward for the mentors that at least avoids punishing the faculty who invest time in this important activity.

Summary of findings of the Working Group on Clinician-Researchers

The NIH/NCCR has awarded Clinical and Translational Science Awards (CTSAs) to 35 academic institutions. In 2008, the CTSA Education Consortium appointed a Mentoring Task Force which conducted a survey of the CTSA research education program directors at each institution, with a response rate of 27/35 (77%). The survey focused on mentorship practices for KL2 scholars, who are junior clinician-researchers granted institutional career awards. Table 2 summarizes some key findings of this survey.

Table 2. Mentoring Procedures for KL2 Scholars at 27 Institutions with CTSA Awards

Procedure	N	(%)
Mentor selected by mentee (rather than assigned by the program)	26	(96)
Formal evaluation of mentors (usually by the mentees) occurs	16	(59)
Mentoring contracts required	14	(52)
In-person orientation of mentors (either individually or as group)	13	(50)
Workshop(s) provided for mentoring training/faculty development	10	(38)
Financial incentive provided to mentors *	4	(15)
Explicit process is present for providing feedback to mentors on evaluation	2	(7)

* These were modest: $1000, $4000, $5000, and $5000 in the 4 programs that provided them

Listed below are recommendations that should be considered core components of any mentorship program for clinician-researchers, followed by optional but desirable features.

Core components recommended for all programs

1. Mentors should be selected by the mentee rather than assigned but the program should facilitate the matching process.
2. Explicit mentoring policies and procedures (i.e., “best practices”) should be developed and provided to both mentees and mentors.
3. Regular meetings with the primary mentor.
4. An advisory committee (alternatively called a mentor panel) is desirable, consisting of a few co-mentors/advisors in addition to the primary mentor.
5. Formal mentoring evaluation should occur at least annually in order to identify any problematic relationships as well as to produce programmatic improvements.
6. Information that could be core resources for all young clinician-researchers should be easily accessible through websites, periodic workshops, and written materials.

Optional but desirable features

7. A written contract/agreement co-signed by the mentor and mentee including explicit language on the mentor’s responsibilities and the mentee’s responsibilities.
8. Formal training for mentors and mentees.
9. Mentees should be able to meet as needed with an independent faculty advisor.
10. Strategies for reducing barriers to mentorship should be developed and implemented.
11. Identifying and supporting the best mentors.
12. Junior investigators who have not yet achieved tenure may serve as co-mentors but should be strongly discouraged from serving as a primary mentor
13. In higher paying clinical specialties where the income differential between private practice and academics is large, explicit discussions should occur with the division director or department chair about research time, income expectations, and which promotion track (e.g., tenure vs. clinical; research vs. service) is optimal and feasible.

Table 3. Comparison of Recommendations across National and Local Working Groups

APM Physician-Scientist Workforce Initiative	Basic Science Researcher Working Group	Clinician-Researcher Working Group	Clinician-Educator Working Group
1. Mentees may require team-based mentoring by groups of mentors who have complementary skills. 2. Institutions should organize multi-generational mentoring groups to acknowledge and reconcile the striking generational differences in attitudes toward work-life balance and controllable lifestyles. 3. Institutions should ensure that mentors reflect the diversity of the workforce and that mentors are trained in approaches to mentoring junior faculty of different genders, races, and ethnicities. Mentoring programs should include formalized training in career negotiation and tracks, grant writing and management, and presentations and publications as well as scientific guidance. 4. Institutions should provide formalized training in mentoring skills for mentors and establish evaluation systems to ensure effective mentoring. 5. Mentors should receive financial support commensurate with professional effort from the institution and/or granting agency.	1. Establishment of formal mentoring committees consisting of at least two faculty 2. Holding regular meetings between the mentor and mentored faculty member (at least twice per year) 3. Availability of mentors at critical times other than the formal meeting times 4. Mentoring goes beyond help on manuscripts and grants, but also includes feedback on teaching/lectures, service opportunities and dossier preparation. 5. Active participation of the junior faculty member in other mentoring programs that are school- and/or institution-wide. 6. Having a formal, written mentoring plan with the responsibilities of the mentors and junior faculty members clearly spelled out. 7. A clear sense that the mentors have a vested interest in the success of the junior faculty member.	1. Mentors should be selected by the mentee rather than assigned but the program should facilitate the matching process. 2. Explicit mentoring policies and procedures (i.e., "best practices") should be developed and provided to both mentees and mentors. 3. Regular meetings with the primary mentor. 4. An advisory committee (alternatively called a mentor panel) is desirable, consisting of a few co-mentors/advisors in addition to the primary mentor. 5. Formal mentoring evaluation should occur at least annually in order to identify any problematic relationships as well as to produce programmatic improvements. 6. Information that could be core resources for all young clinician-researchers should be easily accessible through websites, periodic workshops, and written materials.	1. Clarify which clinician-educators would benefit from what type of mentoring relationship, if any. 2. Design a training program that provides clinician-educators with the skill set to shop for a mentor and develop an effective relationship with a mentor. 3. Design a training program that provides mentors of clinician-educators with the skill set to select a mentee and develop an effective relationship with the mentored faculty. 4. Centralize some of the functions of mentoring and developing mentoring skill sets within a School of Medicine program. 5. Allow individual programs to customize their mentorship programs on top of the minimum requirements set by the central program but require programs to provide some minimum amount of mentoring structure. 6. Set benchmarks that allow programs to judge the progress of the mentoring program and individual mentored faculty. 7. Provide some mechanism of reward for the mentors

Conclusions

The IUSM Task Force on Mentoring reached an early and persistent conclusion that a uniform central mandate from the Dean's Office dictating the required components of all mentoring programs across all Departments would be unwelcome and unhelpful. However, the Task Force also reached the conclusion that the IUSM could better serve the needs of mentors and mentored-faculty through Institutional (centralized) initiatives that would complement Departmental (local) efforts. The Task Force also concluded that mentoring at the IUSM could be substantially improved through coordinated central and local efforts that recognize the heterogeneity of programs and faculty. These new mentoring activities could be appropriately placed under the umbrella of the OFAPD but they will require new (additional) financial resources. The pathway to improved mentoring at the IUSM is viewed as a series of incremental steps sustained over time and characterized by continuous quality improvement.

As shown in Table 3, it is not particularly difficult to reach general agreement on best practices. It is also not particularly difficult to reach the conclusion that institutional leadership and resources can help achieve a more widespread adoption of best practices. Through local data collection efforts, the IUSM Mentoring Task Force concluded that isolated pockets of best practices already exist at the IUSM. The Task Force also identified information to document that institutional efforts to facilitate best practices already exist at IUSM. Thus, the recommendations on the following page focus on the identification of the next incremental action items in institutional efforts that might best support Departmental efforts. Given the current scope of activities within the OFAPD, many if not all of these incremental efforts could logically proceed under the leadership of the OFAPD.

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Note: A list of publications identified in the systematic literature review is available by contacting C.M. Callahan at ccallaha@iupui.edu

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INITIAL ACTION ITEMS FOR INCREMENTAL IMPROVEMENT IN MENTORING AT IUSM

1. **Improve faculty knowledge of, access to, and participation in existing orientation, professional development, and group and individual counseling opportunities already available in the OFAPD**. This might best be accomplished by requiring participation in, and/or performance in, a minimum standard of activities designed to educate new faculty in their roles and responsibilities as IUSM faculty. This minimum standard could vary based on the faculty member's interest in academic promotion and/or their Department or Center. At the time of initial faculty appointment, OFAPD might also consider more formal programming in "induction" activities. However, these activities should not be entirely front-loaded into the first few weeks of employment.

2. **Develop a formal mechanism to account for and reward mentoring activities at the level of individual faculty members.**
   There are growing financial and institutional disincentives that tend to erode the capacity for senior faculty to participate in mentoring. If the institution views mentoring as invaluable to the success of the organization, then mentoring must be rewarded. The most concrete reward would be financial support but institutional recognition and the elimination of disincentives are also understood to be positive steps.

3. **Improve the skill set and knowledge of institutional resources of senior mentors.** This might best be accomplished by identifying a subset of senior or "elite" mentors representing each Department, campus, and/or special needs group. The institution would provide exceptional training, resources, and personal reward for achieving this distinction. This will likely require direct financial support to participants.

4. **Utilize a smaller cadre of senior mentors to provide training to a much larger group of Institutionally-recognized mentors.** This might best be accomplished by developing a registry of faculty interested in providing mentorship and cataloguing their expertise and mentee ratings and thereby developing tailored improvement strategies. Inclusion and participation these activities should come with Institutional rewards (mentioned above) and responsibilities.

5. **Develop a standardized needs assessment of mentored-faculty that would be required for entry into a tenure-track position**. This might best be accomplished by employing any number of currently available self-assessment profiles that would more accurately identify the mentored-faculty's actual needs, help tailor and target institutional resources, and provide a metric for program outcomes.

6. **Develop a menu or tool-kit of mentoring materials and resources that could be adopted at a program level based on needs and interests of individual programs.** This might best be accomplished by OFAPD efforts to produce locally-relevant materials that are sensitive to the local heterogeneity. Given the heterogeneity in Departmental needs and resources, one could anticipate that some programs would be taking first steps and others would be building on past success. OFAPD might also reward excellence at the programmatic level through access to additional resources.