



Designing a Comprehensive Professional Development Program in a Surgery Department: Process, Measures, and Lessons Learned

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BACKGROUND: Departments within academic medical centers are typically comprised of clinical and research faculty, administrative staff, residents, and in many instances advance practice providers (APPs). Each member of these groups of people, at 1 point, took time, effort, and money to recruit, hire, and train. It is therefore important to consider ways to increase the “return on investment” of hiring each member of a department as well as maintaining a high level of department vitality. The Department of Surgery at Indiana University has never had a robust professional development program for all of its members. A challenge, therefore, presented itself of how best to increase faculty engagement in faculty development and to initiate opportunities for professional development for APPs and staff.

INTERVENTION: We implemented a professional development program that focused on academic success with emphasis on teaching and leadership and tailored activities to meet the needs of each member. Professional development was promoted by targeting select groups of people within our department to engage rather than have members go to the effort of seeking development on their own.

SETTING: The intervention occurred in the Department of Surgery at Indiana University which is comprised of ~125 faculty, 100 residents and/or fellows, 60 APPs, and 19 lead business administrators for 6 divisions, all working within 5 downtown hospitals comprising the academic health center.

RESULTS: Great effort has been placed into defining measures for each activity including measures of engagement, completion of deliverables, and tracking new leadership positions obtained by participants. Between 2014 and 2017, the number of faculty development activities

that faculty attended has tripled since inception of our professional development program.

CONCLUSIONS: For those looking to enhance or begin a professional development program, appointing a director or vice chair to oversee and champion the initiative is key. From our experience, putting effort first into developing a junior faculty development program to capture internal motivation early on is likely best. For leadership development, selecting faculty to form faculty learning cohorts worked well. Finally, to deal with the barriers of time and competing interests, building in protected time for professional development is essential. (J Surg Ed 76:727–737. © 2018 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

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INTRODUCTION

Departments within academic medical centers are typically comprised of clinical and research faculty, administrative staff, residents, and in many instances advance practice providers (APPs). Each member of these groups of people, at 1 point, took time, effort, and money to recruit, hire, and train. It is therefore important to consider ways to increase the “return on investment” of hiring each member of a department as well as maintaining a high level of department vitality. One way of increasing departmental success and vitality is through professional development opportunities.¹⁻⁴

The more popular term and focus in academic medicine is on “faculty development.” Faculty development is generally defined as “any planned activity designed to

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improve an individual's knowledge and skills in areas considered essential to the performance of a faculty member."^{5,6} As Bligh states, "Faculty development programmes are outward signs of the inner faith that institutions have in their workforce."⁷ While faculty development is important, it is targeted for faculty which is only 1 component of a department. Staff development, on a continual basis, can often be less of a focus for a department. Supporting a department in a holistic fashion should combine both faculty and staff development which is really best captured under the umbrella term of "professional development." Professional development can be thought of as the "process of improving and increasing capabilities of staff through access to education and training opportunities in the workplace, through outside organization, or through watching others perform on the job."⁸

Typically, professional development can be differentiated into 3 types of activities: (1) self-directed learning experiences, (2) formal professional development programs, and (3) organizational development strategies.⁹⁻¹³ Self-directed learning experiences are individual-driven initiatives to further learning such as evaluating the literature for patient management, designing new protocols, conducting research, participating in curriculum development, researching best practices in human resources, etc. Self-directed learning is often difficult to monitor centrally for a department, with the exception of tracking some continuing medical education data. Formal professional development programs are activities such as workshops, fellowships, individual activities, and mentoring systems that are generally offered at society meetings or on local campuses and departments.^{1,2,13} Organizational development strategies aim for organizational improvement, focusing not on individual change rather to affect organizational change.^{13,14}

CHALLENGE

The Department of Surgery at Indiana University has never had a robust professional development program for all of its members. While the Office of Faculty Affairs and Professional Development within Indiana University School of Medicine is exceptional, offering over 100 events and sponsoring an Academy of Teaching Scholars, only 37% of the faculty in surgery (clinical and research) from 2012 to 2015 attended an Office of Faculty Affairs and Professional Development event(s). The 48 faculty who did attend an event participated in anywhere from 1 to 13 events with researchers and education leaders attending the most. As more APPs were being hired during the same time period, we learned that aside from a hospital orientation program, very little

continuous professional development was provided to surgery APPs. Finally, in reflecting what professional development opportunities the surgery staff, especially the lead administrative staff in each division, were provided, we realized it was very minimal. A challenge, therefore, presented itself of how best to increase faculty engagement in faculty development and to initiate opportunities for professional development for APPs and staff.

This article is a conceptual paper that addresses how our professional development program for the Department of Surgery at Indiana University was designed and what the underlying frameworks were to design it and study it going forward. Taking cue from Ullian et al., we aimed to "identify specific needs of individual faculty (as well as residents, APPs, administrative staff) and match interventions to those needs,"¹³ thus optimizing "just in time learning."

HOW OUR PROFESSIONAL DEVELOPMENT PROGRAM WAS DESIGNED

Six years ago, we hired a new chairman who came to Indiana University, already an advocate for faculty development. During his first 6 months, he held structured interviews with all of the 110 faculty members as well as with all of the 60 general surgery residents. On completion of his comprehensive "listening tour," he noted 3 reoccurring themes: (1) faculty want to be better at their jobs, (2) building leadership should be a priority bottom to top, and (3) there is interest in becoming a premier teaching and learning program. Shortly thereafter, 5 core values were developed for the department, and it became the chair's mission to transform our organization by making professional development a priority for the department. A push was made to devise a comprehensive, strategic plan for professional development that focused on teaching and leadership and included development opportunities for department of surgery residents, faculty (both clinical and research), administrative staff, and APPs. The vice chair of professional development for the department of surgery was charged with this task and partnered with the chair of surgery, residency program directors, vice chair of research, chair of otolaryngology, and director of surgical APPs to identify the needs of each departmental group and brainstorm ways to offer development opportunities. In the end, our professional development program came to fruition as a grassroots movement coupled with ideas from key stakeholders with the culmination of the vice chair of professional development and chairman of the department of surgery designing the curricula. The vice chair

of professional development oversees the program, defines measures, and tracks outcomes.

OUR PROFESSIONAL DEVELOPMENT PROGRAM

The opportunities for professional development that we have implemented for the department of surgery can be seen in [Table 1](#). Most offerings in our program are for faculty as we try to target each critical period in a faculty's career. We begin with a Junior Faculty Development and Mentoring seminar series. The sessions we offer are (1) how to build an academic career, (2) promotion and tenure guidance, (3) effective clinical teaching, (4) conducting effective clinical outcomes research, (5) how to build a clinical practice and understanding the business of medicine, and (6) building leadership competence. After each session, a "deliverable" is given to complete. During the "How to build an academic career" session, a mentoring model is discussed and faculty are required to submit their mentoring map and/or "Board of Directors." The Peer Assessment and Peer Coaching of Clinical Teaching are provided for all new faculties and as needed for other faculty. If peer assessment has not occurred by the end of a faculty's first year, it is scheduled by the vice chair of professional development. A second assessment is also scheduled during a faculty's fourth year or before promotion and tenure dossier submission. Division faculty development sessions occur to educate faculty, fellows, and residents on topics needed for training enhancement and to improve teaching overall. An Advancing Surgeons as Teachers curriculum has been developed to include topics such as (1) establishing a learning climate, (2) effective teaching in the clinic, (3) effective teaching in the operating room, (4) giving more effective feedback, (5) writing a meaningful evaluation, (6) basics of education, (7) presentation tips and techniques, and (8) mistreatment of learners. The Associate Professor Vitality intervention seeks to assess burnout and career satisfaction for all mid-career faculty. The Tiered Leadership Series targets select faculty in leadership roles within the department as well as division chiefs and vice chairs. Through readings, discussion, and reflection, the aim is to strengthen leadership competence. Tier II and III focuses on individual change whereas Tier IV has the goal of affecting more organizational development and change. Examples of topics discussed are (1) the role of emotional intelligence, (2) crucial conversations, (3) preparing a program budget, (4) principles of decision making, (5) the science and art of recruitment, (6) changing the culture, (7) evaluating performance, and (8) the role of trust and accountability. Program development for research faculty occurs

formally with resource allocation and mentoring focused on helping research faculty succeed and feel connected to the department. More informally, the vice chair of research "checks-in" throughout the year with each researcher to offer guidance and support. Finally, for all faculty, Faculty Development E-Bytes were created and delivered monthly but are now sent ad hoc when important updates or the need for "just in time teaching" about a topic are desired. These E-Bytes are ~5 minute, voice-over power point modules that all state-wide surgery faculties can access at their convenience.

Women in Surgery arose from a common interest between the vice chair of professional development in surgery and the chairs of otolaryngology and surgery. It was felt that women in the surgical specialties have unique challenges as the culture at IU continues to evolve. To encourage opportunities for peer support, quarterly "get together" sessions are scheduled to help empower women to succeed and impact change related to diversity.

Professional development for surgical APPs began with the goal to better integrate APPs in to the resident-based surgical teams. Understanding APP and resident training, what each profession can and cannot do, and clarifying roles and expectations for working collectively on surgical teams were the foci of initial development activities. Development then grew into sessions offered to all surgical APPs on various knowledge-based topics as well as skills. Leadership development is also a component for the lead hospital APPs.

The leadership series for the department of surgery business administrators in each division is very similar to the Tier II and/or III series for faculty. Readings, discussion, and reflection on topics tailored for the business aspect of surgery highlights these sessions.

For residents, we have designed a Residents as Teachers and Leaders program that takes place in the summer months and is tailored to knowledge and skills that are Post-Graduate Year (PGY) level specific in terms of teaching and leadership. For example, PGY 1 residents have a session with the chair of surgery and clerkship director to give them an overview of their teaching role and what the goals and objectives are for the clerkship. PGY 2 residents are taught in an interactive way basic teaching strategies as well as how to give more effective feedback. At the beginning of the year, PGY 3 residents focus on how to give an effective presentation by first learning useful strategies and then by applying their skills during a video-taped presentation followed by self, peer, and faculty feedback. At the end of the year, PGY 3 residents engage in a session that introduces them to leadership principles and skills. PGY 4 residents are exposed to teaching strategies for teaching in the operating room as well as more in depth leadership training.

TABLE 1. List of Professional Development Activities that Comprise Indiana University Department of Surgery's Professional Development Program Complete With Description, Timeline for Implementation, and Resources Required for Each Activity

Activity	Description	Timeline	Resources Required
For FACULTY			
<i>Junior Faculty Development Seminar Series & Mentoring</i>	6 workshops along with "Board of Directors" mentoring (occurs every 2 yrs)	Curriculum planning, needs assessment, baseline survey, early 2013; Implementation late 2013	~3 h time for each presenter; Vice Chair (VC) time to plan curriculum, conduct needs assessment and surveys, manage outlook invitations, record attendance, send/collect/review/track deliverables
<i>Systematic Peer Assessment of Clinical Teaching</i>	Observation of clinical teaching with both a verbal debrief and written feedback for P&T dossier	Literature search for methodology 2013; Implementation early 2014	3 to 4 h of VC time per faculty to observe, write letter, debrief
<i>Peer Coaching of Clinical Teaching</i>	Observations of clinical teaching conducted multiple times over a short time frame with more in-depth feedback sessions	Implementation early 2014	~8 to 10 h VC time per faculty to observe, write assessment, debrief, coach
<i>Division Faculty Development sessions</i>	"Education burst" talks tailored to training program needs of each division (2 to 3 times a year)	Curriculum planning and implementation 2015	~2 to 3 h time for each presenter; staff help when sessions require more technology interactivity
<i>Associate Professor Faculty Development Initiative</i>	Conduct a "vitality" intervention (once every 2 yrs)	Planning intervention late 2016 and/or early 2017; Implementation mid 2017	VC time to analyze data from surveys and create intervention
<i>Tier II Leadership Series</i>	Discussion sessions on various leadership topics with readings and post-session application exercises (once a month)	Curriculum planning, participant selection and invitation, collection of letters of interest 2015; Implementation 2016	Facilitator reported ~4 h prep time for each monthly session plus 90 min for facilitation of each session; VC time to invite and/or accept participants, manage the schedule, prepare and/or send session agendas and readings, assign deliverables, track reflections, send survey
<i>Tier III Leadership Series</i>	Discussion sessions on various leadership topics with readings and post-session application exercises (once a month)	Curriculum planning, participant selection and invitation, collection of letters of interest 2015; Implementation 2016	Facilitator reported ~3 h prep time for each monthly session plus 90 min for facilitation of each session; VC time to invite and/or accept participants, manage the schedule, prepare and/or send session agendas and readings, assign deliverables, track reflections, send survey
<i>Tier IV Leadership Series</i>	Discussion sessions on various leadership topics with readings and application exercises (2 to 3 times a year)	Still waiting to launch as the monthly Surgical Council meetings have had too full agendas to date	~2 to 3 h time for facilitator
<i>Professional Development for Researchers</i>	Resource allocation and mentoring to help research faculty succeed and	Implementation 2014	Research funds targeted to faculty in select fashion; time for mentoring

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TABLE 1 (CONTINUED)

Activity	Description	Timeline	Resources Required
<i>Women in Surgery</i>	feel connected to the department (all year) Gatherings to socialize, empower each other to succeed, and impact change related to diversity (quarterly)	Session timeline and topic selection 2015; Implementation late 2015	2 to 3 h time for VC and Chair of Otolaryngology per session
<i>Faculty Development E-Bytes</i>	Short voice-over PowerPoint modules that convey information about a topic related to teaching, research, leadership, etc.	Implementation 2013	2 h of VC time to prep and create each E-Byte
For APPs <i>Professional Development for Advance Practice Providers</i>	Skills labs and knowledge-based sessions along with option of mentoring (quarterly)	Working group meetings, grant submission and/or acceptance, baseline survey 2013; Implementation, grant summary 2014	~2 h time for each facilitator and/or educator, 2 cadavers for skills labs; time given by mentor; VC time to schedule, coordinate, invite and track outcomes for each session
For Administrative Staff <i>Leadership Series for Business Administration</i>	Discussion sessions on various leadership topics with readings and post-session application exercises (quarterly)	Topic selection and implementation 2016	~3 h time for each facilitator; VC time to prepare and/or send agendas and readings
For Residents <i>Residents as Teachers and Leaders</i>	PGY level specific sessions for improving teaching and leadership competence (2 to 3 times a year)	Curriculum refinement and implementation 2013	~3 to 4 h time for each facilitator; staff help when technology is needed to make sessions interactive
<i>Masters program</i>	Residents choosing to do research work toward a masters degree	Implementation 2013	Viable masters programs that are local and covered under tuition benefit; funds from department to support tuition

Finally, PGY 5 residents have monthly leadership mini-sessions with the chairman and are invited to the junior faculty development series, as are all fellows. Also for residents, those who choose to do the 2-year research block during their general surgery residency are required to achieve a masters degree in either clinical science, translational science, biostatistics, public health, or health professions education and these degree programs are funded by the department.

Table 1 also identifies a timeline of implementation and required resources. Essentially, creation of our program began in 2013 with implementation of the junior faculty development series, faculty development E-Bytes, APP professional development, masters program, and an enhanced Residents as Teachers and Leaders curriculum. Peer assessment and Division sessions began in 2015 along with formulating curricula for the Tiered Leadership sessions and Women in Surgery. In 2016, we launched the remaining activities, with the exception of the associate professor initiative which began in 2017. In terms of scheduling, the development activities are spread throughout the year to optimize a “just-in-time” learning system. Our program is funded from the Chairman’s budget.

THE CONCEPTUAL FRAMEWORKS USED TO DESIGN OUR PROFESSIONAL DEVELOPMENT PROGRAM

Agreeing with Steinert et al. about the importance of grounding faculty development both in theory and practice,¹ there were 2 conceptual frameworks from the higher education literature that heavily influenced the way we designed and structured our professional development program. The first framework was described by Zinn in 1997 and focused on the key factors that serve as barriers and supports for professional development for faculty.^{9,15} The second framework was described by Desimone in 2009 and focused on identifying a core set of features of high-quality professional development and using the core features to study the effectiveness of professional development.¹⁶ Both frameworks were considered in our design but for the purpose of this paper, the Desimone 2009 framework will be discussed as among the 2, it is likely the conceptual framework of most interest to readers.

Conceptual Framework of Core Features

In terms of a conceptual framework for studying professional development, Desimone stated that a set of critical features that define effective professional development must be identified as well as devising an operational theory of how professional development functions to influence outcomes. She argues that there is enough research

consensus on what the set of critical features are that increase teacher knowledge, skill, practice, and to some extent student achievement.¹⁶ There are 5 main features: (1) duration (total number contact hours of activity and span of time), (2) collective participation (participation of people from same department), (3) content focus (degree of improving content knowledge), (4) active learning (opportunities to be actively engaged in activity), and (5) coherence (activity consistent with people’s goals and set standards)¹⁶⁻¹⁸ with Garet et al. adding a sixth feature which is activity form (traditional workshop and/or conference versus a reform type).¹⁷

Given the reality of academic life, we have found that 60 to 90 minute activities either offered monthly (recommended) or quarterly are generally best in terms of duration. We span the time over which the activity takes place according to number of topics that ideally are needed to fulfill the baseline knowledge and skill set. Time for professional development competes with patient care, research, administration, and family time. When possible, we build professional development into working hours usually early in the morning or late in the afternoon with no activity lasting beyond 6:15 pm so that family time can still be enjoyed. With the exception of Peer Assessment and Peer Coaching, all of our activities have high collective participation as we structure groups from the same division or across our department to engage. We have designed many of our professional development activities to be akin to “learning communities” thus maximizing colleague togetherness and support. We also support video conferencing for people who are at our remote locations and can only attend by phone or computer screen. For the majority of our development offerings, the focus of the content is to improve the knowledge, skills and attitudes for teaching, leadership, research, clinical practice, and administration. Active learning is at the forefront of each of our professional development designs as we know that interactivity increases learning.¹ Most of our active learning comes from discussion facilitated by experienced professional developers. In terms of coherence, all of the opportunities are part of our professional development program and are equally important. With each session, we aim to present the most current and pertinent literature and resources to be consistent with participants’ goals.

STUDYING OUR PROFESSIONAL DEVELOPMENT PROGRAM

The operational theory that we used to give definition to and study our professional development program was the core theory of action that Desimone described. The steps of her model include (1) Teachers experience effective professional development (that adhere to the

core features). (2) The professional development increases teachers' knowledge and skills and/or changes their attitudes and beliefs. (3) Teachers use their new knowledge and skills, attitudes, and beliefs to improve the content of their instruction or their approach to pedagogy, or both. (4) The instructional changes foster increased student learning.¹⁶ In our case, it is not just teachers but also researchers, administrators, and APPs whose knowledge, skills, and attitudes are increased through professional development and as a result, have individual increases in research productivity, leadership performance, and patient care skills.

To determine whether our professional development program increases success for our department personnel, great effort has been placed into defining measures and tracking outcomes for each of our activities. In following Kirkpatrick's 4-level training evaluation model,¹⁹⁻²¹ we aimed to measure effectiveness and impact on all 4 levels (reaction, learning, behavior, and results) when possible.^{1,22} Our measures and outcomes to date for each activity of our professional development program along with how each outcome aligns with Kirkpatrick's model¹⁹⁻²¹ can be seen in [Table 2](#). Here, we give further detail about some of our more noteworthy outcomes by level. *Reaction* (satisfaction data)—junior faculty development postseries survey showed all respondents valuing the topics as well as indicating that the timing was right for them. One respondent stated: *"I have been here about a year and was ready to bear this information. I know enough about the system and structure and people to have an understanding and appreciation for the content. I would not have gotten as much out of it 6 months ago."* Both the Tier II and III Leadership postseries surveys also showed similar satisfaction with topics and career timing. As a result of a survey sent to all surgical APPs in 2015, 85% of the respondents indicated that they agreed or strongly agreed that there has been increased professional development opportunities presented to them and 79% agreed or strongly agreed that they have seen an increased effort to integrate surgery APPs with the department of surgery. *Learning* (cognitive data) and *behavior* (performance data)—all of the "deliverables" we received from the Tier II and III Leadership sessions were very insightful and indicated being impactful on both the learning and behavior outcome levels. For example, a response to the question: Based on the readings and discussion from last night, describe how you plan to conduct performance evaluations for the people you lead, we received this answer from a division chief: *"As you are aware, I am in the process of performing performance evaluations as the chief for the first time. This session was the perfect orientation. By reviewing the different strategies in the readings, I had an opportunity to discuss what was practical and what was not. I particularly realize*

that this is also an opportunity to obtain 1:1 feedback on what the surgeons' visions are for the future of the program. I have also arranged to obtain data points and personal reflections prior to interviews in order to facilitate the process. The timing for this session could not have been better." In response to the question: What 2-3 tactics will you use the next time you have to deal with difficult people to get them on your side?, we received: *"I will try to separate emotions in order to take a more objective view point; it's my natural tendency to avoid difficult people, but instead, I will make an effort to face them head on with a proactive and positive attitude, instead of being neutral or negative; from the readings, 'Get to know the person you despise.'" Finally, in response to the deliverable: Given a future crucial conversation coming up, what skills will you use to ensure the conversation goes as well as it can?, we received: "I had a crucial conversation scheduled for the Thursday after class, so I applied some of the techniques I learned. I was scheduled to speak with a group of nurse practitioners about a change we planned to make to the trauma service. I had heard they were uniformly against it but the trauma surgeons very much want to make this change. I had originally planned to go to the meeting and try to convince them as to why it was a good idea and to agree with me. The first thing that struck me after class was that I was approaching the conversation as a win/lose. I had to convince them to my side or I would 'lose'. The second point I took away was to try and approach it from a position of mutual purpose. Finally, as I was changing my mind about how I would approach the conversation, I resisted the urge to practice conversation (rehearse). That was actually quite difficult. The meeting went well. . . ." In terms of the results outcome level (impact), our women in surgery group recently helped spearhead a strategic plan for diversity that was adopted by the hospital administration. Additionally, in the last 5 years, 5 of the 6 division chiefs have turned over and all have been replaced by internal candidates whom we have groomed through various leadership skill building programs. This high internal succession rate mirrors the practice of successful succession-planning programs at corporations such as Dow and Ely Lilly which we admire.²³*

LESSONS LEARNED

For those looking to enhance their professional development program or wishing to begin one, appointing a director or vice chair of professional development to oversee and champion the initiative is key. This person will need to be attuned to the culture of the department and school in order to trial and error what works and

TABLE 2. List of Indiana University Department of Surgery's Professional Development Activities Linked With Measures Categorized by Kirkpatrick's Model^{19,21} and Outcomes To Date

Activity	Measures	Outcomes To Date
For FACULTY		
<i>Junior Faculty Development Seminar Series & Mentoring</i>	(1) * Monitor attendance at each session, (2) */∞Track completion rate of each "deliverable" assigned, (3) *Review postseries satisfaction survey, (4) ♦ Assess quality of curriculum vitae and personal statements at 3 yrs review mark, (5) ∞/♦Track, via observation, demonstration of specific teaching methods in clinic/OR/rounds, (6) ∞/♦Track research productivity and collaboration with CORES, (7) *Complete emotional intelligence inventory and identify leadership style	(1) attendance ranged from 24% to 71%; average—46% (2) deliverable completion rate ranged from 24% to 53%; average—33% (3) high satisfaction with topics and timing of program (4) and (5) waiting for outcomes (6) a research faculty learning community formed after program to increase scholarly productivity (7) at least 29% completed inventory
<i>Systematic Peer Assessment of Clinical Teaching</i>	(1) *Track # of faculty who engaged in peer assessment, (2) *Track strengths and weaknesses that faculty identify during debrief, (3) ♦Track # of faculty who include peer assessment in teaching dossier for P&T	(1) 100% (27 of 27) when contacted to observe, (2) 100% tracking to date (3) increased # of peer assessments submitted
<i>Peer Coaching of Clinical Teaching</i>	(1) *Track # of faculty and/or residents who engaged in peer coaching, (2) ∞/♦Monitor teaching evaluations post coaching intervention	(1) and (2) 1 faculty and 1 resident coached to date. Faculty recently promoted, resident graduated
<i>Division Faculty Development sessions</i>	(1) *Monitor attendance at each session, (2) *Gauge faculty and/or resident engagement in each session, (3) *Track value of sessions on annual program evaluation	(1) good attendance overall (2) good engagement, higher at times depending on topic
<i>Associate Professor Faculty Development Initiative</i>	(1) *Track # of associate professor faculty who complete well-being inventory	(1) Inventory being completed summer 2017; no outcome data yet
<i>Tier II Leadership Series</i>	(1) *Monitor attendance at each session, (2) ∞Track usage of notebooks, (3) ∞Track-session responses, (4) */∞Track completion rate of each application exercise assigned, (5) *Track value of sessions via a postseries satisfaction survey, (6) ★Track # of leadership positions filled internally and externally by participants postleadership series	(1) attendance ranged from 50% to 100%; average—67% (2) notebook usage very minimal (3) 100% completion rate from attendees (4) deliverable completion rate ranged from 33% to 100%; average—63% (5) high satisfaction with topics and timing (6) to date 1 participant achieved a new education leadership position
<i>Tier III Leadership Series</i>	(1) *Monitor attendance at each session, (2) ∞Track usage of notebooks, (3) ∞Track postsession responses, (4) */∞Track completion rate of each application exercise assigned, (5) *Track value of sessions via a postseries satisfaction survey, (6) ★Track # of leadership positions filled internally and externally by participants postleadership series	(1) attendance ranged from 44% to 100%; average—70% (2) notebook usage very minimal (3) 100% completion rate from attendees (4) deliverable completion rate ranged from 11% to 78%; average—33% (5) high satisfaction with topics and timing (6) to date 1 participant achieved a new division chief position
<i>Tier IV Leadership Series</i>	(1) *Monitor attendance at each session, (2) *Gauge faculty engagement in each session	No outcomes yet to report.

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TABLE 2 (CONTINUED)

Activity	Measures	Outcomes To Date
Professional Development for Researchers	(1) targeted resource allocation and increased mentoring	(1) 30% increase in clinical research after 3 yrs postcreation of Center for Outcomes Research in Surgery
Women in Surgery	(1) *Monitor attendance at each session, (2) *Track value of sessions, (3) ◆ Identify and/or promote successes of women surgeons	(1) average attendance ~10% (2) no outcomes yet for value (3) successes of women have been promoted via email and at sessions; helped spearhead strategic plan for diversity that hospital adopted
Faculty Development E-Bytes	(1) *Monitor # of times module was viewed, (2) ∞Monitor quiz results	(1) # of views ranged from 11 to 70 from 2013 to 2015; average—28 views per E-Byte (2) quiz results high
For APPs Professional Development for Advance Practice Providers	(1) *Monitor attendance at each session, (2) *Track value of sessions, (3) ★Track retention rate of APPs	(1) average attendance ~17% (2) 85% of APP respondents to a satisfaction survey in 2015 agreed or strongly agreed that there has been increased professional development opportunities presented to them and 79% that there has been increased effort to integrate surgery APPs with surgery department (3) plan to determine retention rate in 2018 (5 yrs mark)
For Administrative Staff Leadership Series for Business Administration	(1) *Monitor attendance at each session, (2) *Gauge administrator engagement in each session, (3) */∞Track completion rate of each application exercise assigned, (4) *Track value of sessions via a post-series satisfaction survey	(1) average attendance ~90% so far (2) high engagement so far (3) no further outcomes to date
For Residents Residents as Teachers and Leaders	(1) *Monitor attendance at each session, (2) ∞Observe PGY 3 videotaped presentation and keep record of feedback, (3) ∞/◆Track feedback given to residents on their Grand Rounds presentations, (4) *Complete emotional intelligence inventory, (5) ∞/◆Track student and peer evaluation ratings and comments of resident teaching performance twice a year with coaching intervention when needed	(1) attendance high (2) feedback given to all PGY3 residents (3) feedback tracked for all Grand Rounds chief resident presentations (4) inventory completed by PGY 4 residents (5) evaluation ratings and comments above average overall; minimal remediation efforts needed
Masters program	(1) ★Track masters completion date, (2) ◆Track research productivity throughout residency	(1) 9 of 9 residents have completed MS or PhD program (2) plan to determine productivity rate in 2018 (5 yrs mark)
Professional Development Program Overall	(1) ★Results of IUSM Faculty Vitality Survey Question: <i>Opportunities for faculty development have been presented to me by my department.</i> ²⁸	2011—3.43 2013—3.28 2015—4.38 *agree scale 1 to 5

*, Level 1: Reaction; ∞, Level 2: Learning; ◆, Level 3: Behavior; ★, Level 4: Results.

what does not for each group of professionals. At the same time, devising a curriculum and partnering with people who have expertise to effectively facilitate activities will be paramount. And finally, this person will need to build a system for measuring outcomes to analyze program effectiveness.

It is likely advantageous to start small by offering a few professional development activities (or grow those programs out of stakeholder needs) and build momentum once interest is there. For us, the chair's support and participation has certainly helped strengthen our program. From our experience, putting effort in the junior faculty development series first and capturing the internal motivation of faculty in their first and second years seemed to have not only presented faculty early on with the message that we are invested in their success, but it has also been telling (only by preliminary observation) which faculty members have the drive to actively steer their academic careers. Schloss et al. reported that at their institution, turnover was highest among assistant professors, leading to expensive turnover costs.²⁴ It is our thought that if faculty, APPs, and staff are made aware of resources both in the department and within the school of medicine early on, then their success and vitality can be optimized and turnover can be minimized. For building leadership competence, we found that selecting faculty who were in significant leadership positions and having to deal with daily leadership challenges were the most engaged, committed, and grateful for the leadership sessions. The format of elaborating new knowledge through discussion among peers and creating opportunities to reflect upon practice and learning^{1,25} worked quite well, although the step of actually submitting the deliverables in formal fashion only occurred by a fraction of the leaders.

Finally, we have noticed within the last year that our professional development program has served us well as a faculty and APP recruitment tool as many of our applicants recognize the importance and value of development opportunities for them as they begin new faculty or APP positions.

GOING FORWARD

As we look to enhance our professional development program, we plan the following:

1. Devote 2 to 3 Grand Rounds a year to professional development so that all division faculty, residents, and APPs can partake at the same time during working hours.
2. Continue with the "faculty learning community" format for leadership and junior faculty development. Build in time at the end of each session for the participants to begin and/or complete their deliverables.
3. Consider coupling intervention strategies as literature suggests that combining strategies may increase

practical effects for professional practice.^{26,27} We may employ spaced education and couple monthly faculty development E-Bytes or weekly email pearls to reinforce concepts and strategies learned in sessions. Alternatively, we may think about investing in more resource intensive approaches⁵ like peer assessment and coaching and target efforts for follow up performance assessment.

4. Re-examine our practice of voluntary participation as Steinert et al. suggest.¹ Currently, participants' time is not compensated however for several years, attendance at professional development events for faculty was included in our Education Value Unit reward system. Our challenge will be to identify how we can expect or require attendance and yet still preserve internal motivation to participate. The 1 strategy we have found to work with increasing attendance is to build professional development into the dedicated conference time of each division. Setting multiple dates to deliver the same professional development messages increases the work for the professional educator but at least the message is received by more faculty as well as residents too, who should also be privy to the teaching and leadership development content.
5. Finally, Steinert et al. imply that professional development in a large academic medical center "occurs in a complex environment in which many unforeseen and unpredictable variables play a role."¹ We aim to study our program more in depth to determine which interventions might be successful (short-term and long-term impact on participants).

CONCLUSIONS

At Indiana University, we have made a conscious effort to invest in professional development for our department of surgery residents, faculty, administrators, and APPs with the intent of supporting and promoting their success in academic medicine. It is our hope that this paper can provide those departments looking to begin or enrich programs of professional development with examples of development activities, frameworks for conceptualization, and possible outcome measures.

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SUPPLEMENTARY INFORMATION

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