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A Designated “Teaching Resident”: A Novel Leadership Position to Promote Educational Skills and an Academic Career

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DESCRIPTION OF THE PROBLEM

Teaching is considered an essential competency during residency training. The ACGME requires that residents participate in the education of medical students as part of achieving competency in “practice based learning and improvement” and “interpersonal communication” [1]. Furthermore, the Liaison Committee on Medical Education states that residents who supervise medical students “must be prepared for their roles in teaching and assessment” [2]. Beyond these mandates, however, many resident trainees have an intrinsic interest in teaching, and encouraging and developing their skills may provide the impetus for a successful academic career. Students often describe residents as being among their most influential teachers in medical school [3]. Previous authors have shown that residents can be very effective educators, even as effective as faculty members in some cases [4].

Some radiology residency programs have begun to develop training pathways for clinician educators that focus on obtaining teaching skills during residency [5]. Although these pathways have been described in only a limited fashion in the radiology literature, across disciplines, they have been given a trial in various programs [5-9]. Formats for these programs range from four-week courses [8], to workshops,

lectures, and seminars [10], to longitudinal experiences described as clinician educator pathways for residents that include mentorship, opportunity to develop teaching materials, and often an educational scholarship project [5,6]. Few programs seem to offer hands-on experience in curriculum design [6], and they rarely, if ever, include educational administration. To our knowledge, none of these programs has any specific emphasis on medical student (as opposed to resident) education in radiology.

Our department has a well-developed, integrated medical school curriculum in radiology, and we encourage residents to participate in many of these teaching efforts. During the four-year curriculum, approximately 500 formal teaching hours are staffed by radiologists each year; approximately 75% of these hours are taught by faculty members, and the remainder by supervised residents. We saw an opportunity to create a mentored, longitudinal experience, focused on medical student education in radiology, that would concentrate on the additional skills required by faculty clinician educators, including curriculum design and educational administration. We hypothesized that designation of a “teaching resident” would encourage participants’ interest in teaching, and their pursuit of an academic career, while increasing the efficiency of our medical student teaching programs.

WHAT WAS DONE

Program Creation

In 2008, we designed a new leadership role in the residency for a rising third-year radiology resident, which we called the “Resident Liaison for Medical Student Education.” Interested residents apply (n = 14 residents per class), and the best candidate is chosen through a competitive review and vote by the Departmental Medical Student Education Committee. The new “liaison,” or teaching resident, is formally announced each year in similar fashion to the chief residents.

The liaison works directly with the two faculty members, administrative leaders for medical student education in the department of radiology, as well as the main medical student education coordinator. Their primary tasks/roles include:

- Maintaining a sign-up link on the residents’ website for medical school teaching, with an updated list of teaching opportunities;
- Recruiting residents for teaching roles in the medical school;
- Fostering enthusiasm for teaching among the residents;
- Helping to determine which residents are most qualified to take on more-advanced teaching assignments;
- Teaching (often the liaison teaches more than a typical resident).

Resident Course Director

We later conceived of the idea that the teaching resident could fill an additional role during his or her fourth year, as a “resident course director” for a two-week career-decision—focused radiology elective for third-year medical students [11]. As with all courses, a faculty course director was ultimately responsible. However, the unique emphasis of this course on career selection, rather than radiology content, made the course particularly well suited to substantial involvement by a resident. Additionally, it provided the resident course director with an opportunity for a central role in curriculum design and course administration.

The course was intended for only a small cohort of undecided students—fewer than 15 per year, of a medical school class of 150, spread over the academic year. (The majority of medical students at our institution [$>80\%$] take radiology courses during their fourth year.) The enrollment was capped to limit any burden on the resident course director. Course dates and day-to-day activities were scheduled by the resident course director to minimize any impact on his or her own training. The day-to-day duties associated with this role include:

- Orienting students;
- Assigning students to particular reading rooms and pairing the students with residents, fellows, and faculty members who had expressed interest in teaching;
- Developing and administering five PACS sessions covering basic imaging topics, to provide an experience similar to actually *being* a radiology resident;
- Designing and leading three discussion sessions with the students on current topics that could affect career choice. The topics included: radiology fellowship

choices, the radiology job market, and outsourcing/computer-aided detection;

- Being available for mentorship.

Survey of Liaisons for Medical Student Education

In 2015, a survey was created, using a 5-point Likert scale, to collect feedback from past and present trainees who had served as resident liaisons for medical student education. The survey and study design were reviewed by the institutional review board, and the study was deemed exempt.

Student and Faculty Member Feedback

Students who completed the career-selection—focused radiology elective between 2013 and 2015 were surveyed as to the performance of the resident course director. Performance was assessed using a 10-point scale (10 best) and narrative comments. Narrative feedback was additionally solicited from the two faculty administrators for medical student education on their subjective impressions of the program and its effect on efficiency of medical student course administration.

OUTCOMES

Program Implementation

The teaching liaison position was first filled in 2008. A total of seven current or former trainees have held the role since that time over the past seven consecutive years. The role of resident course director was created in 2013. Two teaching residents have held that additional role, which immediately followed their initial year.

Survey of Liaisons for Medical Student Education

The results from the survey distributed to all present and former residents

who served as liaison are presented in [Tables 1 and 2](#). Seven of seven (100%) of those asked to participate completed the survey. Responses were collected anonymously. Although six of the seven respondents (86%) stated that they had already considered making teaching a component of their career and were interested in academics before taking on the liaison position, six of seven (86%) felt that serving as the liaison made them either more likely or much more likely to pursue these goals. Six of seven (86%) felt serving in the role had a positive effect on their teaching and administrative skills; five of seven (71%) felt it had a positive impact on their professional skills.

All but one person found the experience enjoyable or very enjoyable, with the one indicating that the experience was burdensome. The two respondents who had an opportunity to serve as resident course director after their liaison year both found the experience to be more enjoyable than the preceding liaison year. All respondents now in practice hold academic faculty positions.

Student Feedback on the Resident Course Director

In 2013–2014, a total of eight students worked with the resident course director, and all of them responded to the survey, giving the resident course director’s performance a rating of 9.6, out of 10. In 2014–2015, five students worked with the resident course director, and four of five (80%) responded to the survey rating the resident course director’s performance as 9.8, out of 10. Narrative feedback was very positive, with representative comments in the following text:

- “Great point person for this elective. Coordinated our schedules well and was flexible to provide additional sessions of my interest. Excellent teaching during PACS sessions.”

Table 1. Multiple choice question portion of the survey distributed to current and former teaching residents, with responses

Question	Answer Choices	Responses (n [%])	Median Response
Had you considered making teaching a component of your career before taking the Liaison position?	(5) Strongly yes	6 (85.7)	5
	(4) Yes	0 (0)	
	(3) Neutral	0 (0)	
	(2) No or (1) Strongly no	1 (14.3)	
Did serving as the Liaison for medical student education make you more or less likely to pursue teaching in your career?	(5) Much more likely	1 (14.3)	4
	(4) More likely	5 (71.4)	
	(3) Neutral	1 (14.3)	
	(2) Less likely or (1) Much less likely	0 (0)	
Had you considered a career in academic radiology before taking the Liaison position?	(5) Strongly yes	3 (42.85)	4
	(4) Yes	3 (42.85)	
	(3) Neutral	1 (14.3)	
	(2) No or (1) Strongly no	0 (0)	
Did serving as the Liaison for medical student education make you more or less excited to pursue a career in academic radiology?	(5) Much more likely	2 (28.6)	4
	(4) More likely	4 (57.1)	
	(3) Neutral	1 (14.3)	
	(2) Less likely or (1) Much less likely	0 (0)	
What is your current position?	Academic faculty	4 (57.1)	N/A
	Private practice	0 (0)	
	Fellow	1 (14.3)	
	Resident	2 (28.6)	
Do you teach in your current position?	Yes	7 (100)	N/A
	No	0 (0)	
What percentage of your current effort is dedicated to teaching?	0-20%	5 (71.4)	N/A
	21-40%	1 (14.3)	
	41-60%	1 (14.3)	
	61-80% or 81-100%	0 (0)	
If you are still in training (n = 3), what are your current career plans?	Academic faculty	2 (66.5)	N/A
	Private practice	1 (33.5)	
Did serving as the Liaison impact your teaching skills?	(5) Strong positive effect	2 (28.6)	4
	(4) Positive effect	4 (57.1)	
	(3) Neutral effect	1 (14.3)	
	(2) Negative or (1) Strong negative effect	0 (0)	
Did serving as the Liaison impact your administrative skills?	(5) Strong positive effect	3 (42.85)	4
	(4) Positive effect	3 (42.85)	
	(3) Neutral effect	1 (14.3)	
	(2) Negative or (1) Strong negative effect	0 (0)	

Note: N/A = not applicable.

■ "... was a fantastic course director. I appreciated his enthusiasm for his career and teaching medical students, as well as getting to know the students. I felt like he was invested in our careers and our ability to make an informed decision. I felt comfortable asking any questions about the specialty that came up and trusted he would provide thoughtful and insightful answers."

Faculty Feedback

The program has been successful from the faculty viewpoint. Anecdotal feedback (gathered from seven years of observations) suggests that residents became adept at handling educational administrative issues, and achieved a much broader perspective on the work involved in running a successful education program. Additionally, the

department of radiology and the medical school course leaders found that recruitment of teachers was much more efficient and reliable when a peer or near-peer educator was involved.

DISCUSSION

We created a new residency leadership position focused on medical student

Table 2. Final question from survey distributed to current and former teaching residents, with responses. Respondents were asked to rank experiences from most enjoyable (5) to least enjoyable (1)

Experience	Respondents							Median Ranking for Experience
	1	2	3	4	5	6	7	
Teaching in the classroom	5	5	5	5	5	5	5	5
Teaching in the reading room	5	5	4	2	4	5	4	4
Curriculum design	5	—	1	5	2	4	5	4.5
Career advising	5	—	3	4	3	4	4	4
Teaching in labs	3	4	2	5	3	3	3	3
Other administration	3	4	—	4	1	3	4	3.5
Teacher recruitment	3	4	—	4	2	1	3	3

teaching, curriculum design, and course administration, in the hope of training radiologists to be well-rounded clinician educators. The trainees that participated in this program felt overwhelmingly that it was influential in their choosing of an academic career, and beneficial in their development of teaching and administrative skills.

Historically, radiology has been underrepresented in medical school curricula [12,13], which is problematic for a number of reasons. First, physicians who are not exposed to *radiology* during their training are ill equipped to navigate the complexities of appropriate imaging-examination ordering, creating unnecessary patient risks and wasted medical dollars. Physicians who are not exposed to *radiologists* during their training are less likely to appreciate the added value radiologists bring to patient care [14]. Recently, emphasis has increased on integrating radiology more comprehensively into undergraduate medical curricula [12,15]. One of the often-cited obstacles to achieving such integration is a lack of invested faculty instructors at many institutions [12] (although many other obstacles exist as well, including competition for time in the curriculum,

and lack of academic time) [12]. Fostering early interest in medical student education among our residents may encourage not only pursuit of an academic career, but also continued interest in this important endeavor.

Our program has been in place for seven years, with one resident elected per year, so our sample size is small. Additionally, most of the program participants had a pre-existing interest in teaching and academia, thereby limiting potential for change. Nevertheless, trainees found the program influential in choosing to pursue teaching as part of their careers. Other radiology departments could consider creating a similar “teaching resident” position, to both support resident interest in education and improve medical student teaching programs.

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