

# Initial Report

Last Modified: 03/05/2016

## 1. Name

### Text Response

Kiran A Kumar

## 2. Affiliation

#	Answer	Bar	Response	%
1	Faculty		0	0%
2	Fellow		0	0%
3	Graduate Student		0	0%
4	Medical Student		0	0%
5	Postdoctoral Scholar		0	0%
6	Resident		1	100%
	Total		1	

## 3. Department

### Text Response

Radiation Oncology

## 4. Title

### Text Response

MD

## 5. Email

### Text Response

kumark@stanford.edu

## 6. Phone Number

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**Text Response**

4806283084

7. Please attach a brief CV or NIH biosketch to accompany your application

File Upload	File Type	File Size
<a href="#">Student CV KK.doc</a>	application/msword	53KB

8. Clinical Educator (CE) Faculty must request and obtain a CE Faculty PI waiver through their RPM, instructions are online at <http://med.stanford.edu/rmg/piwaiver.html#clinician>

*This question was not answered by the respondent.*

9. Grant Type

#	Answer	Bar	Response	%
1	Teaching and Mentoring Innovation Grant: Examples are curricular innovations, mentoring innovations, development of new courses, improvements to an existing course, new approaches to assessment, and/or evaluation of new pedagogical methodologies. This must include an evaluation of the project.		1	100%
2	Educational Scholarship: Examples are study of different approaches to teaching such as a flipped classroom and/or online course, new content development for specific topics (i.e., End of Life Care from the patient perspective and user perspective, or new content development for specific audiences - teaching of small groups, teaching at local universities and/or schools, and teaching of undergraduates in the School of Medicine sponsored summer programs. This must include an evaluation of the project and an outline of a planned scholarly work product in medical or graduate education (e.g., presentation, poster, publication).		0	0%
	Total		1	

10. Grant Amount Requested Two categories of funding will be considered. Up to 1/3 of the funding request is allowed for compensation and the remainder must be requested for non-compensation expenses. Note, continued funding beyond August 31, 2016 may be considered upon submission of a progress report and proposal with budget in the subsequent funding cycle.

#	Answer	Bar	Response	%
1	Large Grants: Grants are up to \$20,000 that must be expended by August 31, 2016		0	0%
2	Small Grants: Grants up to \$10,000 that must be expended by August 31, 2016		1	100%
	Total		1	

11. Uploaded grant proposals must include all sections below and should not exceed 2 pages (optional)

*This question was not answered by the respondent.*

12. Project Description

**Text Response**

The transition to first year of radiation oncology residency is difficult, largely due to the steep learning curve, lack of graduated responsibility, and inconsistent teaching of the “fundamentals” of radiation oncology. Our goal is to create a formalized, targeted curriculum for incoming residents to learn the essential skills necessary for radiation oncology residency. This project is being developed under the guidance of the Stanford Clinical Teaching Seminar Series and will be designed based on Kern’s six-step approach to medical education curriculum development. We believe our new curriculum will improve resident confidence and comfort in transitioning to radiation oncology residency, and hope that it will serve as a model for other residency programs in the future.

13. Rationale

**Text Response**

Transitioning from intern year to first year of radiation oncology residency (PGY-2) is difficult and often frustrating for residents. Unlike most medical residency training programs, in which there are teams comprised of junior and senior residents, radiation oncology residency typically follows an apprenticeship model (Harris EE et al IJROBP 2009), with one resident assigned to one or more attending physicians for a certain period of time. Because of this, there is often a lack of graduated responsibility; first year residents face the same duties and expectations as senior residents. Additionally, radiation oncology is a very specialized field, which is minimally covered during medical school didactics (Dennis KE et al IJROBP 2010), resulting in a steep learning curve upon entering the field. All of these factors contribute to the difficulties in the transition to radiation oncology residency, which we hope to alleviate with this curriculum.

14. Pilot Data

**Text Response**

In a general needs assessment/problem identification performed via one-on-one interviews of 10 residents at our institution, all residents stated that they had significant difficulty with the transition into radiation oncology. The reasons for this difficulty fell into these top three categories: 1) lack of knowledge of radiation oncology “fundamentals,” 2) difficulty understanding workflow, and 3) unclear service-specific expectations. Most residents reported variable timing and method of learning the “fundamentals” of radiation oncology, such as how to check KV and CBCT images or IMRT plan evaluation, as well as understanding of workflow and service-specific expectations. These basics are usually learned within the first year but often not until the latter half. All residents believed that the transition would have been easier had this knowledge been acquired earlier, and most thought that this would be best done through formalized,

interactive didactics led by senior residents.

## 15. How the project supports/promotes diversity

### Text Response

This project will take into account the diverse learning styles of radiation oncology residents in the design of the curriculum. In our targeted needs assessment, we will determine the variety of different methods that residents learn best and incorporate elements of each into our final curriculum.

## 16. Methods of Design

### Text Response

The design of this project will be based on Kern et al's six-step approach to medical education curriculum development (Kern DE et al, JHU Press 2009). Problem identification and general needs assessment (step 1) was performed qualitatively through one-on-one resident interviews as described above. We plan on using these results to create our targeted needs assessment (step 2), a web-based survey with multiple-item Likert scale, yes/no, and free-response questions asking about difficulties with transitioning into residency, institution-specific didactics or interventions that are or would be helpful, specific subjects that are most important to learn early on, how best to teach them, etc. This survey will be e-mailed to all ~700 radiation oncology residents and ~90 residency program directors across the country, with a goal of a 40% response rate. Wilcoxon signed rank-sum will be used for statistical analysis, and the results of this survey will be used to develop our curricular goals and objectives (step 3) and educational strategies (step 4). We will design a curriculum covering the specific skills and content that residents identify as most important to learn early on. The curriculum format will be determined based on resident feedback of most effective method (i.e. formal lecture vs. small group discussion vs. hands on demonstration vs. other). Currently, we envision the curriculum primarily taught by senior residents in an interactive, small group or one-on-one setting, with 2-3 hour sessions once a week over 1-2 months.

## 17. Timeline and Implementation Plan

### Text Response

We plan on implementing this curriculum (step 5) as a pilot study with the incoming resident class at our institution in July 2016. Here is our general timeline: - March 2016: Design targeted needs assessment web-based survey and send to all radiation oncology residents and program directors in the US - April 2016: Collect data from targeted needs assessment, which will be used to determine exact content of our curriculum - May 2016: Develop curriculum including lectures, cases, and hand outs - June 2016: Develop pre- and post-curriculum surveys that will be given to incoming residents for evaluation of new curriculum - July 2016: Implement pilot curriculum with incoming radiation oncology PGY-2s - August 2016: Collect and analyze data from pre- and post-curriculum surveys - September-December 2016: Write up manuscript presenting results of our pilot curriculum - May 2017: Present final pilot curriculum results at the 2nd Annual Stanford Innovations in Medical Education Conference through the Stanford Clinical Teaching Seminar Series

## 18. Anticipated work product

### Text Response

Our final work product will be a structured curriculum consisting of 5-6 blocks (1/week) that will each cover 1-2 topics. We anticipate each didactic block to consist of a mixture of lecture, question and answer, case based discussion, and hands on learning through simulations. All didactics will be small group (4 incoming residents and 1 chief resident instructor) and interactive.

## 19. Evaluation Plan

### Text Response

Evaluation and feedback (step 6) will be performed by post-curriculum survey using Likert scales to rate usefulness of curriculum components (Likert R, Archives of Psychology 1932), as well as pre- and post-curriculum evaluation of individuals' skills through self-assessment, written questionnaires/exams, and/or direct observation.

## 20. Dissemination of Results

### Text Response

We plan on presenting the findings of our targeted needs assessment, as well as goals and objectives, educational strategies, and curriculum design at the Radiological Society of North America (RSNA) Annual Meeting in November 2016. Following implementation and evaluation of the curriculum in July 2016, we will submit our work for publication to a radiation oncology-specific journal such as the International Journal of Radiation Oncology Biology Physics (JROBP) or medical education journal such as Medical Education. Our final work will be presented at the 2nd Annual Stanford Innovations in Medical Education Conference through the Stanford Clinical Teaching Seminar Series. Following this, our next goal will be to partner with radiation oncology residencies at other institutions in a multi-institutional cooperative group research model, as has been successfully performed with a medical student clerkship curriculum in radiation oncology (Rad Onc Educ Collab Study Group, J Am Coll Radiol 2015).

## 21. Anticipated impact of project on education and/or mentoring

### Text Response

We anticipate that our new curriculum will improve resident confidence and comfort in transitioning to radiation oncology residency. By formally evaluating our curriculum and publishing our results, we hope that it will serve as a model for how to improve the transition to residency in other specialty residencies both here at Stanford and at other institutions.

## 22. Specific Educational Aims

### Text Response

In creating our curriculum for incoming radiation oncology residents, our specific educational aims are: 1) To improve resident confidence and comfort in transitioning to radiation oncology residency by better understanding the general workflow and service-specific expectations 2) To increase resident competency earlier on in PGY-2 in areas deemed most essential based on the results of our targeted needs assessment, which may include one or more of the following: - Focused radiation oncology H&P - Interpretation of various imaging modalities (CT, MRI, etc) - General radiotherapy options such as external beam radiation, brachytherapy, and stereotactic radiosurgery - Basics of physics and radiobiology - Contouring in Eclipse - Verification of daily kV and CBCT images to ensure patient alignment - Radiation treatment plan evaluation - Management of common acute and late toxicities of radiation therapy - Introduction to statistics and clinical research

## 23. Budget request upload (must include tables above)

*This question was not answered by the respondent.*

## 24. Compensation request

Default - Line item 1				
Description of request	Compensation/Salary and Benefits Amount	%FTE (if applicable)	Cost per 100% FTE-salary and benefits (if applicable)	Total Cost
-	-	-	-	-
Default - Line item 2				
Description of request	Compensation/Salary and Benefits Amount	%FTE (if applicable)	Cost per 100% FTE-salary and benefits (if applicable)	Total Cost
-	-	-	-	-
Default - Line item 3				
Description of request	Compensation/Salary and Benefits Amount	%FTE (if applicable)	Cost per 100% FTE-salary and benefits (if applicable)	Total Cost
-	-	-	-	-
Default - Line item 4				
Description of request	Compensation/Salary and Benefits Amount	%FTE (if applicable)	Cost per 100% FTE-salary and benefits (if applicable)	Total Cost
-	-	-	-	-
Default - Line item 5				
Description of request	Compensation/Salary and Benefits Amount	%FTE (if applicable)	Cost per 100% FTE-salary and benefits (if applicable)	Total Cost
-	-	-	-	-
Default - Line item 6				
Description of request	Compensation/Salary and Benefits Amount	%FTE (if applicable)	Cost per 100% FTE-salary and benefits (if applicable)	Total Cost
-	-	-	-	-

## 25. Non-Compensation

Default - Line item 1				
Description of request	Item	Quantity of item	Cost per item	Total Cost
Incentive for surveys	Amazon gift care	10	\$100	\$1000
Default - Line item 2				
Description of request	Item	Quantity of item	Cost per item	Total Cost
Supplies	Didactic handouts/supplies	4	\$50	\$200
Default - Line item 3				
Description of request	Item	Quantity of item	Cost per item	Total Cost
Software	GraphPad	4	\$100	\$400

Default - Line item 4				
Description of request	Item	Quantity of item	Cost per item	Total Cost
Travel Expense	Flight & Hotel for RSNA 2016	1	\$1000	\$1000
Default - Line item 5				
Description of request	Item	Quantity of item	Cost per item	Total Cost
-	-	-	-	-
Default - Line item 6				
Description of request	Item	Quantity of item	Cost per item	Total Cost
-	-	-	-	-

**26.** Budget justification (Narrative description of item as applicable)

**Text Response**

Line 1- As an incentive to have as many radiation oncology residents and program directors as possible fill out our targeted needs assessment survey, we plan on giving away ten \$100 Amazon gift-cards to 10 different randomly chosen participants (~800 total potential participants). Line 2- The estimated cost of supplies (hand outs and other material needed for the curriculum) is \$50/student. Line 3- In order to facilitate clinical research during residency, especially early on prior to formal Statistics course work, we would like to get a 1-year student license for each incoming resident for GraphPad to help with basic statistical analysis. Line 4- We would like to present our results at one of the largest national conferences, RSNA 2016 in Chicago, and thus are requesting travel and lodging funding for one person.

**27.** IV. APPROVAL AND LETTER OF SUPPORT Each applicant must provide a letter of support. For clinical trainees, the letter of support must be from his/her training and/or advising director. For basic science trainees, the letter of support must be from his/her faculty mentor. For faculty, the letter of support must be from his/her department chair. For graduate and medical students, the letter of support must be from his/her Advising Dean and/or faculty mentor.

File Upload	File Type	File Size
<a href="#">Stanford TMA Innovation and Educational Scholarship DC Letter 2-29-16.docx</a>	application/vnd.openxmlformats-officedocument.wordprocessingml.document	422.8KB