RSNA Educational Scholar Grant

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NOTE: Personal information for the applicant and other investigators has been removed from this sample application.

Title:
Developing a Curriculum for Teaching the Business of Radiology

Abstract:
Organized academic radiology has largely ignored the needs of radiology trainees with respect to teaching them the essentials of radiology practice management and business principles. Residents and fellows enter their new careers vulnerable to and ignorant of pitfalls in establishing a radiology office, purchasing equipment, negotiating contracts, ensuring accurate billing and collection, and evading potential medicolegal entanglements. The proposed educational program is designed to provide, through RSNA, an electronic curriculum of one year's duration (24 lessons) for teaching these principles.

The principal investigator, who already has an MBA degree, will use the Educational Scholar Grant to develop the skills needed to design Web-based electronic interactive learning modules that 1) incorporate video and static teaching material, 2) create the most effective multiple choice questions and answers for determining the knowledge gained by the viewer, 3) input spread sheets that can be downloadable for offline use, and 4) develop tools for assessig the relevancy of the modules to clinical and academic practice. The value of the program will be tested serially as well via electronic surveys as trainees enter their careers.

The grantee will spend 16% of his time taking lessons on educational techniques and Web design while using the textbook he co-edited, Radiology Business Practice: How to Succeed (2007) as a starting point for developing the curriculum. With this basis, the material for the lessons will be readily available, and is already well-organized.

The main benefit to the radiology community would be the development of a practical user-friendly interactive online program that teaches business principles for a successful radiology practice whether in academia or private practice.

Percent of Time Dedicated to this Project:
16%

Priority Statement:
The Educational Scholar Grant will allow Dr. Yousem to pursue his personal goal of extending the education of radiology trainees beyond medical knowledge to a more practical "real-world" essentials of a radiology career. Dr. Yousem has demonstrated his appreciation of the value of learning business principles as exemplified by his completion of the Johns Hopkins Business of Medicine MBA program as well as its Leadership Development Program. However, Dr. Yousem wishes to extend the lessons gained from these programs need to all radiologists participating in the private practice and academic settings. In so doing, the field of radiology will continue to thrive financially and be able to fund advanced technology in the private practice setting and the research and development critical to the specialty in the academic arena. Dr. Yousem conceived of and subsequently co-edited a new book on the topic entitled "Radiology Business Practice: How to Succeed "written by over 20 authors and representing an attempt to disseminate this knowledge to the field. However, the teaching of the material would benefit from a more interactive and focused approach directed to 1) radiology trainees 2) department and practice administrators, or 3) any radiologist without a basic business background.

Dr. Yousem's personal mission is to develop and foster responsible leaders in radiology. The material he plans to present online will fulfill that mission by teaching radiologists how to be more effective and knowledgeable about the business that they practice. They will make more wise and beneficial decisions as an informed leader in their group practice.

The Department of Radiology at the Johns Hopkins Medical Institution does not currently have a business of radiology curriculum and does not formally instruct its trainees on how to survive in radiology practice. Word of mouth education isspartan since most of the faculty have only an academic radiology perspective. The department is very interested in developing such an on-line curriculum that would benefit its trainees as well as new administrators and staff in the radiology department. Since the department's goal is at least in part to prepare its students for a successful career in radiology, this proposal will fill a void that must be addressed.

Clearly the maximum benefit of this proposal will be afforded the radiology community in general because of Dr. Yousem's proposal to offer this material online through the RSNA. Currently the Society of Chairman in Academic Radiology Departments offers a course for new or soon-to-be chairpersons that overlaps some of the material that Dr. Yousem is proposing, but this is a limited opportunity to a restricted audience. The RSNA presents material at its annual meeting but few if any trainees attend these courses. Additionally, there are very few if any continuing medical education courses(Educational Symposia has a single course from 2005 entitled Economics of Diagnostic Imaging 2005: National Symposium, RadiologyInfoNet offers Organizational Architecture in Radiology, and the University of Pennsylvania will offer a Practice Leadership course this year in Snowmass) that cover this material. The nature of these CME courses

and their expense are unlikely to appeal to radiology trainees. Furthermore the timing of the material is critical as it should be presented by the latter years of the radiology training period since the ability to decide what type of practice to join, assess the viability/valuation of a practice, read the firm's financial spread sheets, assess the competitive environment and analyze a proposed employment contract are essential to starting a career successfully. The RSNA curriculum will be accessible to all members on line at any time and can be updated based on annual meeting content and/or through Dr. Yousem's maintenance of the site material on an annual basis.

In summary, the proposal is in harmony/synchrony with Dr. Yousem's personal mission, the Johns Hopkins Radiology Department's goals, and the vision of the RSNA in providing essential material to its youngest members. Funding such a proposal will be beneficial to multiple segments of the radiology community.

Detailed Education Plan:
Dr. Yousem's program for the Educational Scholar Award will stress three basic elements of advanced training in education:
1) Improving teaching skills of the recipient
2) Web design classes for construction of the on line curriculum
3) Additional business school courses to guarantee state-of-the art material for the trainee

Improving the teaching skills of the recipient
Classes at Johns Hopkins undergraduate campus will teach the best way to present material on line for remote education. Currently the grantee has had extensive experience in organizing and designing lectures and courses for a live audience. Creating a curriculum that will be wholly designed for remote learning with no direct personal communication with the student requires developing material in a different manner. The visual nature of the material must be emphasized as opposed to the auditory sensation that is paramount when lecturing to a live audience. The material that will be provided on line will largely be textual and, although interactive, more didactic in nature. Therefore, the strategies for engaging the student when employing this means of education will be explored at the Johns Hopkins Undergraduate campus.

Classed offered through the school on this topic include 1) Multimedia Tools for Instruction, 2) Gaming and Media Design for Learning, 3) Integrating Media into Standards-Based Curriculum, 4) Designing and Delivering E-Learning Environments (formerly Web-based Mentoring and Coaching)

In addition the grantee will attend all RSNA workshops on effective lecturing and interactive case development.

Web design classes for construction of the on line curriculum
Yet another skill to be learned is web design for educational purposes. Rather that relying on submitting material to computer specialists that do not understand the nature of the material being presented, the grantee will be able to construct the curriculum himself after taking the appropriate classes. This will enable rapid revision and improvement of the content, keeping it current, and maintaining the web site year after year as part of the RSNA's offerings to its membership. Continuity of care can be maintained.

Lessons on this topic will be provided by the Computer Career Institute at Johns Hopkins University. The center has a number of programs for prospective web designers and developers and offers Master Certificate programs in Web Graphics Designer, Web Multimedia Designer, Web Design Specialist, Web Developer, E-Commerce Developer, and Certificate Modules in subject areas such as Graphic Essentials, Web Essentials, and Web Design, intended to enhance the career of someone who is already a professional. The Multimedia & Web Design program provides you with a solid foundation in visual information & design, computer illustration and Photoshop, web site design, usability and graphics as well as interface design, multimedia and 2D animation, cartooning, and portfolio development. The Digital Multimedia and Web Design program emphasizes the ability to communicate an idea in writing, visually, and verbally on the Web. The courses allow proficiency in Adobe, Macromedia visual arts suites, Dreamweaver and Flash, this program provides you the skills you need to start or advance your career in Multimedia & Web Design.

Additional business school courses to maintain state-of-the art material for the trainee
With the rapid changes in the health care legislative environment, managed care theories, and consolidation of analytical thought on the best way to take care of the nation's health, it is imperative to maintain up to date knowledge in the field of the Business of Medicine. The Johns Hopkins Carey School of Business does just that with courses developed on a semi-annual basis to keep the health care professional attuned to the latest trends in the medical field as it relates to economics. The grantee will enroll in the appropriate lectures that emphasize the current state of the health care economic picture so that the material on line reflects the contemporary thought. In additional the Carey school offers information technology classes that will assist in the web design project listed above.

The grantee will spend the equivalent of 16% effort on the educational scholar grant work divided into 6 hours a week of class work and 3 hours a week of developing the material for on line presentation and question and answer feedback. In the beginning there will be more effort spent in developing the web design skills such that the material conceived in the business course can be converted to a web based format. After these skills are developed and a framework of the course material is created, the educational and business school material will be more effectively applied. The 24 lectures for the course Dr. Yousem is proposing will include the following themes:
1. Introduction to the Business of Radiology
2. Practice Governance
3. The Role of Physician Leaders in a Practice
4. Strategic Planning
5. Accounting Basics
6. The Relative Value Unit System
7. Accounts Receivable

8. Accounts Payable: Managing Expenses
9. Creating a Practice Dashboard
10. Analysis Techniques for Assessing Growth Opportunities
11. Capital Equipment Purchases
12. Incentive Plans
13. Quality Improvement Programs
14. Marketing
15. Teleradiology
16. Entrepreneurship and Financing
17. Contracting with Managed Care Organizations
18. Employment Contracts
19. Writing Practice Policies and Procedures
20. Credentialing and Certification
21. The Malpractice Environment for Radiologists
22. The Ethics of Radiology Practice
23. Defending One's Turf
24. Legislative Initiatives/Regulations

The radiology community will benefit greatly from Dr. Yousem's proposal since the material 1) will be offered on line through the RSNA, 2) represents new material for radiology trainees that is critical to them for early success in their careers, 3) will be interactive and therefore more appealing to the viewer and 4) can be continually updated and maintained. The material is critical to trainees in the latter years of their radiology education since the ability to decide what type of practice to join, assess the viability/valuation of a practice, read the firm's financial spread sheets, assess the competitive environment and analyze a proposed employment contract are essential to starting a career successfully.

The timetable for Dr. Yousem's educational program and subsequent development of the curriculum for the Business of Radiology will allow simultaneous development of powerpoint presentations of the material/topics listed above while he develops the skills for presenting them interactively on the web.

Time Frame	Curriculum Development	Educational Skill Acquired
1-6 months	Outline of material for 24 lessons developed	Basic Web Design
7-12 months	Creation of PowerPoint presentations	Interactive Web Material, Educational skills 1) Multimedia Tool for Instruction, 2) Gaming and Media Design for Learning, 3) Integrating Media into Standards-Based Curriculum, 4) Designing and Delivering E-Learning Environments (formerly Web-based mentoring and coaching)
13-18 months	Insertion of Multimedia material and interactive audience response system	Additional Business classes to update current legislative environment and new trends in health care market
19-24 months	Update and finalize latest business school concepts. Create course quizzes and evaluation material for immediate and delayed learning assessment	Latest material in web page maintenance and analysis of evaluation material for continuous improvement of online course

Budget:
The funds provided by the RSNA for this work will be used to pay for X% effort salary support and fringe benefits for Dr.Yousem (actual percentage and dollar amounts have been removed from this sample application)

Tuition for classes are calculated at $605 per credit at the Carey Business School and Computer Career Institute. Most graduate level courses are 3 credits. Three courses per semester at 3 credits each X 2 semesters per year X $605/credit =$10,890. There are registration fees of $150 per semester. Total cost = $11,190.3.

Software purchases for web site creation are expected at annual cost of $3,000 (e.g. Creative Suite 3 Web Premium =$1599, Dreamweaver = $400, Web Studio 4.0 Deluxe = $250, Option technologies interactive $500)4. Copyright releases may be required for some material used in "Radiology Business Managment: How to Succeed" fromElsevier. Estimated cost is $2000.5.

Consultant fees for portions of web design above and beyond Dr. Yousem's expertise are estimated at $3000.

TOTAL BUDGET: $75,000

Other Sources of Support: Dr. Yousem could apply for scholarships to the Carey Business School. Alternatively there may be opportunities for tuition remission through the university program. If advertising is solicited for the web site business curriculum, those companies may pay for part of the site development. There are internal funds available in the department through the Gatewood Foundation and Perovitch Grant funding mechanisms.