

2007 Scholarship of Teaching Grants (STG) Application

Grant Application

Title of STG proposal: Mobile Medicine Podcast Program

Project Director

Name: Thea Ballinger MA

Title: Assistant Residency Program Director

Department & Division: Family and Community Medicine Residency Program

E-Mail address: ballinger@uthscsa.edu

Campus phone number: 358-3937

Collaborators

Name: James Tysinger PhD

Title: Vice Chair for Education and Faculty Development

Department & Division: Family and Community Medicine

E-Mail address: tysinger@uthscsa.edu

Campus phone number: 567-3043

Name: Mark Nadeau MD MBA FAAFP

Title: Residency Program Director

Department & Division: Family and Community Medicine Residency Program

E-Mail address: nadeaum@uthscsa.edu

Campus phone number: 358-3905

Name: Juanita Trevino

Title: Academic Coordinator

Department & Division: Family and Community Medicine Residency Program

E-Mail address: trevinoj@uthscsa.edu

Campus phone number: 359-3931

Executive Summary

Discuss the educational problem and how your project will address the issue. Please reference the numbers and types of students the project will assist as well as the techniques used to evaluate the project. Be aware that the Executive Summary will be provided to *all* members of the Academic Center for Excellence in Teaching (ACET) Advisory Committee and will be used in the review process. *Please limit your summary to 200 words.*

Annually, Family Medicine Residents are required to take the American Board of Family Medicine (ABFM) In-training exam (ITE). The ITE is similar in format to the national board exam. It consists of items written to test the core of knowledge and patient management skills in 8 major areas: Internal Medicine, Surgery, Obstetrics, Community Medicine, Pediatrics, Psychiatry and Behavioral Sciences, Geriatrics, and Gynecology. Historically, about 38% of our residents score below the 20th percentile nationally. Poor performance on the ITE can be an indication of how a resident will perform on the national board exam and their potential risk of failure. Reading journal articles and keeping abreast of the latest clinical information is a challenge for any physician. For a resident, that time is even more limited and divided between clinical obligations and the academic requirements of residency training. Finding the time to read is often difficult or not the preferred mode of learning for the resident.

Family Medicine residents spend a minimum of 30 minutes a day commuting between several clinic sites in the San Antonio metropolitan area. As part of a structured remediation plan, this travel time and other down time in clinic will be used to listen to short audio recordings or podcasts on clinically relevant topics applicable to patient care and national board preparation. With the development of a Mobile Medicine Podcast Program, including iPod MP3 players and access to locally developed and nationally developed podcast recordings, residents will be given a convenient and portable learning venue. Program success will be determined by comparing pre and post ITE test results, along with gathering formative and summative evaluations from program participants on the applicability of the program to test preparation and the operational aspects of the program.

Total amount of funding requested: \$2,964.85

Budget Request

Item (<i>itemize each below</i>)	Funds Requested
Consumable supplies: IN KIND DONATIONS FROM FAMILY MEDICINE DEPT: \$500.00 Paper, Ink, Copy Fees, Laptop Usage.	\$0.00
Equipment: 18 - iPod Nanos (\$149.00/each) 18 - iPod protective cases, (\$10/each) 1 - Blue Snowball, USB Professional Microphone (\$100.00)	\$2,964.85
Hourly rate services (e.g. software programming): IN KIND DONATIONS FROM FAMILY MEDICINE DEPT: \$2400.00 \$20/hr x 120 hours of web development, over the duration of the project. (24 hrs for initial development and 8 hours a month for updates and maintenance)	\$0.00

Other expenses: IN KIND DONATIONS FROM FAMILY MEDICINE DEPT: \$59.95	\$0.00
Podcast Production Software (Podcast Station)	
TOTAL (calculated)	\$2,964.85

Travel and equipment: Budget requests to support travel for presentations at meetings related to an STG project must be justified in the application. If the grant is funded, travel expenses may not exceed 10% of the total award. If the project budget includes funds for purchasing equipment, the applicant must document that such equipment is not available or accessible at UTHSCSA.

Proposal Review Criteria

Your application is expected to answer each of the six questions below. Please complete each section.

1. Definition of the problem

Define the instructional problem addressed by the project. Indicate how the proposal relates to students' needs, is innovative, and takes advantage of interdisciplinary collaboration. Discuss research literature related to the problem.

With increased workloads and decreased time for training opportunities, residents, medical student and practicing physicians need to use every resource available to them to increase their exposure to clinical cases and to further their knowledge. It is an expectation of the medical community that healthcare providers, including physicians be aware of the latest information regarding patient care and the healthcare system as a whole. [1] Medical students and residents must develop a habit of continuing their own professional development and make a commitment to life long learning. The use of new technology, such as podcasts and MP3 players, in this process of professional development has become more commonplace. An informal survey of the current Family Medicine residents found that roughly 50% of them already own some type of MP3 player or have ready access to one. Cell phones continue to be improved and the newer models include an MP3 player.

The ability to listen to audio recordings or podcasts on a mobile device such as an iPod or MP3 player while driving home or exercising opens up a whole new opportunity for learning. The use of podcasts has the potential of offering superior support for auditory learners, which makes up at least 30% of all learners [2,3]. According to their website, the American Board of Family Medicine (ABFM) has gathered information from test candidates on effective study strategies over the past few years. Numerous candidates site the use of audio recordings in improving their test scores by as much as 200 points [4]. The Mobile Medicine Podcast Program will provide a supply of iPods to residents without access to an MP3 player, as well as a web-based library of podcast recordings in areas of primary care available for download to their MP3 players or accessible online.

Web-based learning in its various forms provides a sea of information for learners, but this mode of learning still requires the learner to be seated in front of a computer or look at their handheld computer to get information. In 2006, JW Rainsbury conducted a search of three popular internet search engines (Google, Yahoo, MSN) for medical audio and videocasts. He found very few resources of substantial educational value. A search was also done of PubMed and only three articles on the topic were found. [5] Almost a year later, a similar search does not produce significantly different results. The growth of podcasts available on the internet has definitely grown, but those from credible academic medical centers are limited. The proposed Mobile Medicine Podcast Program will help to improve the availability of educational and clinically relevant podcasts, while also providing the learner with the capability of

“anytime, anywhere” learning or mobile learning (m-learning) with relevant information downloaded to a portable MP3 player. [6]

The podcast topics developed will be relevant to any student, resident, and faculty member in primary care, such as Family Medicine, General Internal Medicine, and General Pediatrics. Broad spectrum topics areas dealing with patient care, prevention and pharmacotherapy will broaden the applicability of the project to nursing students, allied health students and other practitioners. Subject matter experts from all of these areas will be invited to contribute to the project. The locally produced podcasts will also be uploaded to the iTunes Store website (<http://www.apple.com/itunes/store/podcasts.html>) making them available for free to anyone in the world over the internet.

References:

1. Lesley Pugsley and Peter McCrorie, Improving medical education: Improving patient care, Teaching and Teacher Education, Volume 23, Issue 3, Key Issues in Medical Education, April 2007, Pages 314-322. [<http://www.sciencedirect.com/science/article/B6VD8-4N3GNTX-1/2/90b0ee32b11a9c3979aef4c431cc1c70>]
2. Auditory learning style [http://www.trcc.comnet.edu/ed_resources/tasc/Training/Auditory_Learning.htm]
3. The aural (auditory-musical-rhythmic) learning style [<http://www.learning-styles-online.com/style/aural-auditory-musical/>]
4. American Board of Family Medicine, FailSafe ABFM Examination Study Tips [<https://www.theabfm.org/cert/fail-safe.pdf>]
5. JW Rainsbury, “Podcasts: an educational revolution in the making?”, Journal of the Royal Society of Medicine, Volume 99, Sept. 2006, 99:481-482.
6. “Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education”, M. Boulos, I. Maramba, and S. Wheeler. BioMed Central, BMC Medical Education 2006, 6:41

2. Design of the project

Describe what is planned, how it will be done, and who will do the work. Specify time lines for the proposed project.

A supply of iPods Nanos (18) will be purchased and available for check-out by select family medicine residents for an initial period of one (1) month. The iPods will be available for additional months based on demand. The iPods will be securely stored in the Project Director’s (Ballinger) office and issued by appointment only. Residents with their own iPods or MP3 player will be encouraged to use their own devices. Available iPods will first be distributed to residents who score lower than the 20th percentile on the ABFM In-Training Exam and are asked by the Residency Program Director (Nadeau) to develop a study plan under the guidance of Dr. James Tysinger, Director of Faculty Development. Those individuals will participate in the Mobile Medicine Podcast Project.

On an individual basis, the Project Director (Ballinger) will brief the participants on the goals of the Mobile Medicine Podcast Project. She will deliver a complete orientation on how to use the iPod and the “Podcasts in Primary Medicine” website, including how to download podcasts and operate the iPod. Participants will be issued one of the stock iPods if they do not have one of their own to use. The Project Director (Ballinger) in collaboration with Dr. Tysinger will also assist the participants in identifying podcasts that most closely align with the goals of their Individual Learning Plan. Additional technical assistance will be provided, as needed from the Project Director (Ballinger), throughout the duration of the projection.

The Project Director (Ballinger) will develop the “Podcasts in Primary Care” website in conjunction with other web-based curriculum development projects within the family medicine residency. A survey of currently available medicine and healthcare podcasts on the World Wide Web was already conducted and the results will be integrated into the references and links listed on the website, under the guidance of the Residency Program Director (Nadeau) and Associate Program Director (Zeballos). These findings will also influence the subject matter included in this project’s

local podcast productions in order to avoid duplication. A sample of some currently developed healthcare/medicine podcasts include:

o Agency for Healthcare Research & Quality (AHRQ): <http://www.healthcare411.org/>

o McGraw-Hills Access Medicine
<http://www.accessmedicine.com/home.aspx>

o Johns Hopkins Medicine Weekly Health News
<http://feeds.feedburner.com/jhmpodcast>

The “Podcasts in Primary Care” website, will include these resources and others, along with our own locally produced podcast recordings.

An initial analysis of the 2002 - 2006 ABFM In-Training Exam results was conducted by the Project Director (Ballinger) in February 2007. Subject areas where 50% or more of the residents got the question incorrect were targeted as areas of needed improvement. An initial list of ten (10) podcast topics was developed based on the identified areas of improvement. The list includes topics in geriatrics, women’s health, adolescent health, maternity care, pediatrics, diabetes management, and pharmacotherapy. Initial contact has been made with local subject matter experts (SMEs) and faculty about participation in this project. Several have already enthusiastically agreed to participate. The development of podcast talks will be easy. SMEs will take already developed talks/presentations and tailor them to the shortened podcast format. Two (2) podcasts a month will be produced from February to October 2008. As new podcasts are created and posted to the “Pods in Primary Care” website, program participants will receive an email update with instructions for downloading.

Upon receipt of the 2007 ABFM’s In-Training Exam results in mid-December 2007, program participants will be identified by the Residency Program Director (Nadeau) and referred to Dr. Tysinger, Faculty Development Director for a remediation plan. A second analysis of resident scores will be conducted by the Project Director (Ballinger) to identify any new areas of needed improvement. It is anticipated that the same trend of problem areas will appear as did in the analysis of the 2002-2006 exam results.

Midway through the project, June 2008, the Residency Academic Coordinator, Janie Trevino, will administer a practice In-Training Exam for the project participants. Following the exam, participants will be asked to complete an evaluation on the effectiveness of the podcast project in helping improve their score on the practice exam. Dr. Tysinger, Director of Faculty Development, will compare the practice exam results with each participant’s previous results to determine any areas of improvement. This data in conjunction with the feedback received from the participants will be used to make any need adjustments to the project. The official ABFM In-Training exam will take place again in November 2008. Exam results will again be analyzed upon receipt and a comparative analysis will be done between the previous years exam results (pre-test), the mid year practice exam (formative test) and the new exam results (post-test). Project participants will again be asked to complete a summative evaluation on the effectiveness of the podcast program in helping them improve their exam score.

PROJECT TIMELINE

February 2007

Project Director: Thea Ballinger, MA

- Analysis of In-Training exam results to identify the subject matter areas where residents had poorest performance.
- Development of preliminary list of ten (10) topics to develop as podcast productions.
- Initial contact with subject matter experts on creation of podcasts.
- Survey of medicine and healthcare podcasts on the World Wide Web.

May 1, 2007

Project Director: Thea Ballinger, MA

- STG Proposal Submission

Sept. 2007

- Award Notification

Sept-Oct. 2007

Project Director: Thea Ballinger, MA

- Purchase of project materials
 - iPods
 - iPod cases
 - Podcast Station Production Software
 - USB microphone
- Begin development of “Pods in Primary Care” website. Develop key subject matter areas.

November 2007

Collaborator: Janie Trevino

- American Board of Family Medicine (ABFM) In-Training Exam (ITE) administered.

Mid-Dec. 2007

- ITE exam results received.

Residency Program Director: Mark Nadeau, MD

- Analysis of individual resident scores and referral for study plan if needed.

Collaborator: James Tysinger, PhD.

- Meet with referred residents and develop Individual Learning Plans. Recommend participation in podcast project and schedule orientation time with Project Director, Thea Ballinger.

Project Director: Thea Ballinger, MA

- Follow up analysis of exam results to identify the subject matter areas where residents had the poorest performance.
- Revise podcast production list as needed.

January 2008

Project Director: Thea Ballinger, MA

- Continue recruitment of subject matter experts and work on development of podcast materials.

February 2008

Project Director: Thea Ballinger, MA

- Record first local podcast by month-end.
- Orient project participants to use of equipment and website.

March-October 2008

Project Director: Thea Ballinger, MA

- Continue local podcast productions. Produce two (2) podcasts a month February to October 2008.
- Continue adding resources to “Podcasts in Primary Care” website.
- Send email updates to project participants about new podcast additions.

June 2008

Collaborator: Janie Trevino

- Administer practice In-Training Exam for project participants.

Collaborator: James Tysinger, PhD.

- Distribute formative evaluation & analyze results.

Project Director: Thea Ballinger, MA

- Implemented any need adjustments to project.

November 2008

Collaborator: Janie Trevino

- Administer official American Board of Family Medicine (ABFM) In-Training Exam (ITE).

Mid-Dec. 2008 – January 2009

- ITE exam results received.

Collaborator: James Tysinger, PhD.

- Distribute summative evaluation to project participants & analyze results.

Project Director & Collaborator: Thea Ballinger, MA and James Tysinger, PhD.

- Conduct comparative analysis between the previous year's exam results, the mid year practice exam and the new exam results.

3. Potential impact

Discuss the effects the proposed changes will have on student learning including the number of students who are likely to be affected.

Locally the project will help improve the patient care skills, medical knowledge and in-training test scores of 36 family medicine residents per year. The project will impact other residency programs as well. The proposed topics will be applicable to the other primary care residents (Internal Medicine and Pediatrics) at UTHSCSA that are required to take the National Board of Medical Examiners (NBME) Step III exam. The proposed project would also benefit roughly 256 medical students per year that rotate through family medicine and are required to take the NBME Family Medicine Specialty (Shelf) Examination at the end of their third year clerkship rotation.

Because the podcast topics focus on common clinical topics seen by the primary care provider, the information will be applicable for an even wider audience in Nursing and Allied Health students and residents.

The potential impact of this project will continue to expand with the upload of locally produced podcast to both the "Pods in Primary Care" website and to the iTunes Store website (<http://www.apple.com/itunes/store/podcasts.html>). The information will be available online for free for an unlimited number of students, residents and faculty.

4. Plan for continuation

Priority will be given to activities that will be continued beyond the initial funding period. Grants can be used as seed money to demonstrate the potential impact of the project and attract additional funding.

This project is that is a relatively inexpensive to get started and maintain. The biggest anticipated cost will be replacement of lost or broken iPods. An informal survey of the Family Medicine residents found that roughly 50% of them already own some type of MP3 player or have ready access to one. Cell phones continue to be improved and the newer models include MP3 players. As this project continues, it is anticipated that fewer participants will need to use the supply of iPods requested for the project, but to ensure access for everyone there needs to always be an available

supply.

The Family Medicine Residency program leadership is committed to the development of life-long learning in its residents, as well as the practice of evidence-based medicine. The program currently provides residents with PDA's and trains them to use the PDA's in order to encourage their use of evidence-based medicine at the point of care. The added integration of podcasts and available iPods to encourage life-long learning is a cost effective mode of training. The residency program has limited classroom time to deliver required areas of training. The availability of faculty to teach is also fairly limited. The program is currently investigating different modes of content delivery. The potential benefits of the Mobile Medicine Podcast Project could be expanded to include the production of additional the recording of required didactic sessions. The podcasts could be used to supplement the limited classroom time for more high-yield exercises and interactive sessions. After the project has proven itself effective, Dr. Mark Nadeau, MD is committed to providing continued support for the project with both in-kind donations and monetary support for purchase of needed equipment.

The broad applicability of this project lends it to several other venues and areas of development. The Department of Family & Community Medicine currently has a well established Grand Rounds Program offering online CME credit and the ability to watch live presentations streamed over the internet. The current technology used to capture the live presentations on the internet is being upgraded and will soon offer podcast capability. This upgrade will expand the current reach of the Grand Rounds, allowing it to enter more easily into the mobile learning environment. Faculty, Residents and Students from all disciplines will be able to download the presentations into their iPods, MP3 players and other mobile devices. The integration of the Mobile Medicine Podcast Project with our department's current Grand Rounds program would not only expand the audience for Grand Rounds, but also expand it's capabilities for training. Separate podcast productions could include panel discussions based on the topic of a Grand Round presentation or Q & A sessions with the presenter.

5. Plan for evaluation

Include a formative evaluation that provides information during the development of the project and a summative evaluation of the project outcomes.

A formative evaluation would be distributed in June 2008 following the administration of a mid-year practice In-training exam. Project participants will be asked to rate how usefully the podcast project is in helping to prepare for the exam, how applicable the podcast topics are to the exam, along with soliciting suggestions for topics on future podcasts, and other areas of improvement. We will also measure their satisfaction level with the operational elements of the project, such as how easy it is to use the website to download podcasts and their comfort level using the iPod.

We will distribute the summative evaluation in January 2009, following the receipt of new ABFM In-Training exam scores and analysis. Again, project participants will be asked to answer the same questions posed on the formative evaluation to rate how usefully the podcast project was in preparation for the In-training exam. Furthermore, participant will be asked if they think they will continue to use the technology in the future.

Short term indicators of success for the project will be 1) Improved performance on the annual In-training exam, 2) High applicability ratings, and 3) High satisfaction ratings and indications of continued use by program participants. Long term indicators of success for the project will include: 1) Continual improvement on In-training exam scores for program participants over 3 years of residency training, 2) Continued demand for the program by residents, 3) Support from department for continuation and expansion of the projection after initial funding, 4) Increased visibility of the "Pods in Primary Care" website at UTHSCSA and other medical schools/residency programs as a reputable learning resource for faculty, residents, and students.

6. Plan of Information Dissemination

Include the conference, journal or other peer reviewed source in which the results from the study will be shared with other professionals. **Please note:** Plans for IRB approval will have to be discussed with all

members of the project. The intent of the IRB is to foster high ethical standards in the conduct of research and to assure that uniform criteria are applied to protect the human subjects who take part in research. Although IRB approval is NOT necessary when submitting the proposal, IRB approval will be necessary before dissemination of results to peer reviewed outlets.

The results of the project will be submitted for presentation at the annual conference of the Society of Teachers of Family Medicine (STFM), as well as for publication in their journal, "Family Medicine". The members of this project team have an excellent track record of involvement and publication with STFM. Project results will also be submitted for publication to the Association of American Medical Colleges journal, "Academic Medicine".

7. Budget/Cost Sharing

Include a justification of the budget so that it is clear why each item requested is essential.

The Department of Family & Community Medicine is enthusiastic about implementation of this project, but does not currently have the money to purchase all required equipment.

Therefore, the equipment request for \$2964.85, includes the purchase of: 18 - iPod Nanos (\$149.00/each), 18 - iPod protective cases, (\$10/each), and 1 - Blue Snowball, USB Professional Microphone (\$100.00).

The purchase of 18 iPods will ensure access for all project participants. Based on an informal survey of current residents, roughly 50% currently own their own iPod or other mobile media player. The protective cases are being requested to protect the iPods during transport and use by project participants. The 1 USB Professional Microphone is to be used to record the local podcast productions. This specific microphone has been chosen over other USB microphones for its ability to record both unidirectional (sensitive to sounds from one direction) and Omnidirectional (sensitive to sounds from only more than one direction). It has been recommended by industry professionals as ideal for professional sounding podcasts.

The Department of Family & Community Medicine is willing to contribute in-kind donations, including: \$500.00 for Consumable Supplies, \$2400.00 for web design/development time (\$20/hr x 120 hours over the duration of the project- 24 hrs for initial development and 8 hours a month for the updates and maintenance), 59.95 for Other Expenses, including purchase of Podcast Production Software (Podcast Station) which will be utilized to capture the podcast recordings, perform final editing and upload the finish product to the World Wide Web.

In addition to the above donations, a laptop will also be provided by the department of family medicine for use on this project. The department's web server will host the "Pods in Primary Care" website at no additional cost.

Project Director Biosketch

Submit a NIH biographical sketch of the Project Director below.

NAME:

Thea Kristine Ballinger, MA

POSITION TITLE:

Faculty Associate, Assistant Residency Program Director, UTHCSA, Dept. of Family & Community Medicine

EDUCATION/TRAINING

University of North Texas, Denton, Texas, BAAS, 1996, Major: Behavior Science

Webster University, St. Louis, MO, MA, 2003, Major: HR Training & Developmt

A. Positions and Honors

Positions and Employment

2006-Current: Faculty Associate, Assistant Residency Program Director, Family Medicine Residency, Dept. Family & Community Medicine, UTHSCSA

2003-2006: Distributed Education Coordinator, Dept. Family & Community Medicine, UTHSCSA

2002-2003: Administrative/Operations Manager, School of Engineering Advanced Computer Education Center, Southern Methodist University

1998-2002: Technical Education Coordinator, School of Engineering Advanced Computer Education Center, Southern Methodist University

Professional Memberships

2004-Present Society of Teachers of Family Medicine (STFM)

2003-Present American Society of Training and Development (ASTD)

Honors

2006 2005 Robert Mc Cormick Memorial Staff Appreciation Award: Exemplary Service Award based on nominations from department staff and faculty. Dept. Family & Community Medicine, UTHSCSA

B. Selected peer-reviewed publications (in chronological order).

Abstract

1. Ballinger T, Tysinger JW, Usatine RP. ACE (Alliance for Clinical Education) Abstracts: Proceeding of the 2006 Annual Predoctoral Meeting of the Society of Teachers of Family Medicine (STFM), "Do They Know What They Need? Outcomes of Letting Students Choose to Attend Didactics" Laurence Erlbaum associates, Inc; 2006. p. 356-361. (Teaching and Learning in Medicine; vol.18, no. 4).

Journal Article

1. Gazewood J, Margo K, Jerpak C, Burge SK, Ballinger T, Usatine RP, Predoctoral Directors: who are they and what do they do in these trying times? Family Medicine 2007 Mar;39(3):171-177.

C. Research Support.

Not currently applicable.

Approval certification

TKB - By initialing this field, I affirm that my Department Chair has approved this project.