

Appendix B Proposal Cover Page

1. **Date Submitted:** April 29, 2009

2. **Project Title:** Case-sharing online learning to enhance dental students clinical education

3. **Project Theme:** Foster & facilitate active learning in classroom and /or clinical learning environments

4. Applicant/Project Director Name:

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7. Requested dollar amount (up to \$5,000 is available): \$4,814.00

Appendix C Proposal Narrative Outline

To insure that the proposal narrative includes important information to adequately determine its feasibility and impact potential, applicants should follow the content outline below in preparing their Scholarship of Teaching Grants (STG) proposals. *(Maximum Score 75 Points)*

Proposal Elements
<p>1. Project Title (5 points)</p> <ul style="list-style-type: none"> ▪ What is the project idea?
<p>2. Description of the problem or Statement of need (15 points)</p> <ul style="list-style-type: none"> ▪ Why should this project be implemented? ▪ Decide if you want to put your project forward as a model. ▪ What is the problem, need or deficiency that will be addressed by this project? ▪ Why is it important to address this problem? ▪ Find data the best support your project. ▪ Give the reader hope and avoid overstatement and emotional appeals.
<p>3. Design of the project (20 points)</p> <ul style="list-style-type: none"> ▪ What will be developed or implemented?, and, importantly ▪ Why is this approach innovative and likely to enhance students' learning or the quality of their educational experience? ▪ What tasks will be performed? ▪ How it will be done? ▪ Who will do the work?
<p>4. Potential impact (15 points)</p> <ul style="list-style-type: none"> ▪ What objective(s) do you hope to achieve by implementing this project?
<p>5. Evaluation Plan (10 points)</p> <ul style="list-style-type: none"> ▪ Describe how you will evaluate whether or not the project objectives were achieved.
<p>6. Plan for Continuation/Budget Plan/Cost Sharing (15 points)</p> <ul style="list-style-type: none"> ▪ What will be done to continue the project beyond the initial funding period? ▪ Develop a detailed budget and provide budget justification. Specify and describe any cost sharing arrangement.

Appendix C-1 Proposal Narrative Worksheet

The proposal narrative should include the items below and be no more than five (5) pages:

Proposal Narrative
<p>1. Develop a project title <i>(10 points)</i></p> <p>Case-sharing Online Learning to Enhance Dental Students’ Clinical Education</p> <p>2. Briefly describe the problem that you plan to address in your proposal. <i>(15 Points)</i></p> <p>Senior dental students provide comprehensive patient care within General Practice Groups (GPGs) at the UTHSCSA Dental School. Because their clinical learning is dictated by patients’ needs and thus not equivalent within the group, not all of them have the same clinical experience. Certain treatment such as crown lengthening, esthetic cases including porcelain veneers, and complete oral rehabilitation are not performed by all students. In the GPG directed by the Investigators (Drs. Rose & Oliveira), students have demonstrated a desire to experience some of those more complex clinical procedures. One of our current senior students made PowerPoint presentations of some of his clinical cases to send to his brother who recently graduated from dental school and to other senior dental students. These presentations were helpful in preparing our students for dental procedures that they had not previously provided. Henzi et al (1) assessed the perspectives of 605 dental students, from 23 U.S. schools, about their curriculum. Students frequently reported that learning new techniques and applications enhanced the quality of their dental education.</p> <p>According to Cox “Episodes of experience not witnessed by others may have otherwise remained embedded in one person’s memory and lost to the collective wisdom of practice” (2). Our research hypothesis is that providing our students with a mechanism for sharing clinical case stories will enhance students’ expertise in handling similar types of patient treatment, because they will have access to the insights, lessons learned and recommendations of other students, from initial patient assessment and diagnosis, through decision making during treatment planning to final clinical outcomes. A case sharing system will facilitate student and faculty discussion of the impact of different influences on clinical decision-making, such as patients’ dentophobia, convenience, cost, risks and benefits of treatment, and students’ motivation and confidence.</p> <p>This online case-sharing module will enable the exchange of valuable information about relevant clinical procedures/experiences among students through multimedia presentations and the use of evidence-based dentistry. Sharing unique experiences among students has the potential to enhance their education within the GPGs and will provide opportunities for peer teaching by our students.</p> <p>Similar models of online learning have been successful among medical and dental students (3, 4, 5). However, no study was found in the literature, in which online PowerPoint presentations on comprehensive clinical cases were shared among students, via Blackboard, (6) with faculty supervision, using the best evidence available to justify clinical decisions.</p> <p>The goals of this project are to increase students’ confidence level in performing certain clinical procedures before they graduate from dental school and enhance the extent and quality of educational interaction among student peers and among students and faculty.</p> <p>References:</p> <p>1. Henzi D, Davis E, Jasinevicius R, Hendricson W. In the students’ own words: What are the strengths and weaknesses of the dental school curriculum? <i>Journal of Dental Education</i> 2007;71:632-645.</p> <p>2. Cox K. Stories as case knowledge: case knowledge as stories. <i>Medical Education</i> 2001;35:862-866</p>

3. Vega JM, Rubio VJ, Espigado P, Asension J, Vinao M, Esteban E, Gonzalez-Carpio R. Radiological clinical tele-session: a cooperative working environment for sharing clinical experience over the internet. *Med Inform Internet Med.* 2006 Jun; 31(2):129-41.
4. Peterson D, Kaako T, Smart E, Jorgeson M, Herzog C. Dental students attitudes regarding online education in dentistry. *J Dent Child* 2007;74:10-20.
5. Fakhry A and Dehkordi-Vakil F. Video-assisted clinical instruction in dentistry (VACID) enhances real time visualization of clinical procedures. *Eur J Dent Educ* 2007;11:238-244.
6. <http://blackboard.com/>

3. Describe the how your project is designed and identify key faculty and/or other resources that you expect will contribute to the completion of your project (20 Points)

We will create an online case-sharing strategy, using Blackboard, to facilitate exchange of clinical experiences among students. Blackboard is a Web-based course-management system designed to allow students and faculty to participate in classes delivered online or use online materials and activities to complement face-to-face teaching. Blackboard enables instructors to provide students with course materials, discussion boards, virtual chat, online quizzes, an academic resource center, and more (6). Web 2.0 technology can easily be embedded in Blackboard. All students at UTHSCSA dental school are very familiar with Blackboard which supports most of the courses in the curriculum.

With faculty guidance, students will photograph patient care procedures and create cases, in PowerPoint format, that will be posted at the case-sharing module on Blackboard. Students are familiar with the Canon cameras that will be used to document the cases, and have received training in intra-oral photography. All students will be provided memory cards to be used with the cameras and have experience downloading photographs and preparing presentations using PowerPoint. All dental students have laptops with the PowerPoint software needed to create the cases. Cases created by the students will be reviewed and approved by either Dr. Oliveira or Dr. Rose before being posted on Blackboard website. Cases will include photographs of clinical procedures, oral pathologies, and/or reports of difficult patient management and medical conditions. Photoshop will be used to improve quality of photographs and Adobe Acrobat will be used to create the presentations before they are posted on Blackboard. Once posted, other students in the GPG can comment on the case and contribute information about similar patient care experiences. The Blackboard administrator for the case-sharing module (Dr. Oliveira) will be responsible for posting students' opinions about cases and facilitating students' participation. In seminars, students and faculty will discuss cases at least once a month, using best evidence in the literature to assess clinical decisions. Dr. Erica Oliveira and Dr. William Rose will conduct the seminars and supervise all clinical procedures. A total of 28 senior dental students will be involved in the project.

Time-line:

July 2009: At the start of the fall semester, dental students will begin to document clinical cases with the use of their cameras. This process will continue throughout the academic year. The Photoshop and Adobe software will be purchased.

August 2009: Dr. Rose and Oliveira are trained in Blackboard, Photoshop, and Adobe Acrobat by the Academic Technology Services training specialists. The Blackboard case-sharing module will be created as a component of the course titled GEND 8077 - General Dentistry Clinic.

September 2009: The pre-case-sharing questionnaire (Pre-Test; described in section 5) will be developed by Co-Investigator Hendricson in conjunction with the project director, pilot-tested prior to use in this study, and completed by participating students to measure: (1) students' confidence in providing various types of patient care and procedures they will encounter during the senior year in the clinic, (2) their satisfaction with the extent

and quality of educational experiences pertinent to these areas of patient care, and (3) their overall level of confidence in performing important phases of patient care: assessment, diagnosis, treatment planning, provision of dental treatment, and assessing outcomes of care. Students will also complete the ClinEdIQ (Clinical Education Instructional Quality) Inventory⁷, a standardized instrument used in previous studies of clinical education in dentistry, to provide their perceptions of the learning environment and student – teacher interactions. Students in the GPGs participating in the case-sharing project (experimental group) and students in two GPGs who are not (controls) will complete these questionnaires before and after implementation of the project to determine the influence of online case-sharing and the associated seminars on students’ perceptions of clinical education and confidence in providing patient care.

7. Henzi D, Jasinevicious R, Davis E, Cintron L, Isaacs M, Hendricson WD. What are Dental Students’ Perspectives about their Clinical Education? *J Dent Educ.* 2006; 70(4): 361-377.

September 2009-May 2010: A variety of clinical procedures will be performed and documented by participating students. Case presentations will be developed, reviewed by Drs. Oliveira and Rose, posted on the Blackboard site for case-sharing, and then discussed among students and faculty by means of online postings and seminars.

Project investigators will work with selected students who posted exemplary cases to develop case-reports for publication.

February-March 2010: Dissemination of preliminary findings by Dr. Rose and Dr. Oliveira at the annual meeting of the American Dental Education Association (ADEA) in Washington DC.

May 2010: Students in the experimental and control GPGs complete the post-test versions of the questionnaires previously described.

4. List your project objectives and describe the anticipated impact on the quality of teaching and learning within your academic department as well as beyond your department once the objectives are achieved. (15 Points)

The goals of this project are to increase students’ confidence level in performing certain clinical procedures before they graduate from dental school and enhance the extent and quality of educational interaction among student peers and among students and faculty.

The short-term objective is to involve a group of senior dental students in a clinical case-sharing online module, in which they will share their clinical experiences through multimedia presentations, as previously described, and discussion in seminars that focus on best evidence available in the literature.

The long-term objective is to have 28 clinical cases developed and posted at the Blackboard site for sharing among students and faculty by the conclusion of academic year 2009-2010. Key outcome measures for assessment of project effectiveness will be the number of cases that are posted online and analysis of the number of comments contributed by students about these cases in addition to analysis of student responses to the post questionnaires including comparison between control and experimental GPGs.

5. Describe how you plan to evaluate your project’s immediate and long-term progress. (10 Points)

Student’s confidence in designated aspects of dental patient treatment, including procedural skills, will be assessed by questionnaire before and after implementing the case-sharing module. Students will also assess the learning environment and student-teacher communication by the ClinEdIQ instrument as described in section 3. Questionnaire responses of students on GPGs who did and did not participate in online case-sharing will be compared. A focus group will be conducted by an evaluation specialist in ACET to determine students’ perceptions of the case-sharing.

The number of faculty-approved cases submitted to the Blackboard website will be tabulated and the number of students’ comments posted to the website will be analyzed.

Project Logic Model:

Target Population	Underlying Assumptions	Inputs/Resources & Challenges	Activities	Outputs	Outcomes
Senior dental students	<p>1) All students in the GPGs are interested in learning new complex clinical techniques</p> <p>2) All students will answer pre and post questionnaires</p> <p>3) All patients will sign photograph releases</p> <p>4) Students will participate actively in Blackboard module by sharing their experiences and accessing clinical cases online</p>	<p>Each senior dental student has an average of 40 patients in need of a variety of clinical procedures</p> <p>Two faculty members will be available to supervise clinical cases, and participate in discussions during the seminars.</p> <p>One faculty member will be the case-sharing website administrator</p> <p>Cameras & memory cards are already available.</p> <p>All students and faculty know how to utilize cameras and have had intraoral photography training</p>	<p>Pre and post questionnaires applied to all participating students. IRB approval will be obtained prior to data collection</p> <p>Complex clinical procedures will be performed and photographed in clinic</p> <p>Clinical cases will be presented to students using the best evidence available in the literature during discussions</p> <p>Cases will be posted on Blackboard.</p> <p>Student and faculty will have access to the material posted</p> <p>Comments/discussions by students managed by Blackboard administrator (faculty member)</p>	<p>28 students enrolled</p> <p>At least 28 clinical case presentations shared among students/faculty</p> <p>Creation of a data-base of clinical cases on Blackboard for easy access by dental students</p>	<p>Creation of a case presentation database gives opportunity for students to write and publish case-reports.</p> <p>Improved student confidence in providing patient care & performing certain dental procedures</p> <p>Improved students' perceptions of learning environment</p>

6. Describe the resources you plan to generate to continue and expand your project after the one-year STG funding period. (15 Points)

Budget /Cost Sharing Justification

Equipment:

Four Canon Rebel XT cameras with Macro lens and Macro ring flash. In kind support will be provided by the UTHSCSA Dental School in the amount of \$5,200.00.

One memory card per student (28 memory cards total)- In kind support will be provided by the UTHSCSA Dental School in the amount of \$840.00. Cameras and memory cards will be utilized to acquire images to be used by students in the PowerPoint cases.

Software –

Photoshop will be used to improve photographic images.

Adobe Acrobat will be used to create portfolio presentations that will be posted on Blackboard.

Academic Technology Services:

Multi-media consultation services and instruction design consultation services will be needed for creation and maintenance of the case-sharing module on Blackboard and for training on Blackboard, Photoshop and Adobe Acrobat for Dr. Oliveira and Dr. Rose.

Academic Center for Excellence in Teaching:

Support is requested for: (1) administration and scoring of the ClinEdIQ questionnaire and (2) conducting a focus group with a representative group of dental students who participated in case-sharing and preparing a report to summarize findings.

Information dissemination (travel): Drs. Oliveira and Rose will present findings at 2010 ADEA (American Dental Education Association) Annual Session & Exhibition in Washington. February 27 - March 3, 2010. Support is requested for fabrication of posters.

With acquisition of the needed software, development of the Blackboard site and faculty training provided by the ACET STG funding, the case-sharing module will be self-sustainable. Faculty members who will receive the software/Blackboard training in 2009-2010 will be able to train students in the following years.

Appendix D Proposal Budget Worksheet

Name of Project: Case-sharing Online Learning to Enhance Dental Students Clinical Education

Name of Applicant/Project Director: Dr. Erica R Oliveira

Date Submitted: May 1, 2009

Budget Category: Non-Personnel	Budget Justification	STG	Cost Sharing *	Total Amount
Project Supplies	Software: Photoshop (discounted from UTHSCSA bookstore) - allow students to improve image quality	\$345.00		\$345.00
	Adobe Acrobat (discounted from UTHSCSA bookstore) - reformat presentations to be posted on Blackboard	\$169.00		\$169.00
Purchased Services	Academic Technology Services Multi-media Consultation (16 hrs. at \$45 per hr) Instruction Design Consultation (16 hrs. at \$45 per hr)	\$1440.00		\$1440.00
Purchased Services	Academic Center for Excellence in Teaching Administer & score CLinEdIQ (8 hrs at \$60/hr) Conduct focus group with dental students participating in case-sharing module: plan & report (8 hrs at \$60/hr)	\$480.00 \$480.00		\$960.00
Information Dissemination	Dr. Oliveira and Dr. Rose present findings at 2010 ADEA Annual Meeting; February, 2010	\$1,500		\$1,500
Presentation Materials	Fabrication of academic posters	\$ 400		\$400
Equipment	4 cameras Canon Digital Rebel XT with Macro lens and MR-14X macro ring flash (4 @ \$1,300.00 each) 28 memory cards (28 @ \$30.00 each) 2 Canon battery chargers (2 @ \$45.00 each)		\$5,200.0 0 \$840.00 \$90.00	\$6,130.0 0 00
TOTAL BUDGET --- Project Request		\$4,814.00	\$6,130.0 0	\$10,944. 00