The Florida State University

College of Medicine

Open Educational Resources Task Force

Final Report

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Final Report

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September 21, 2010

Table of Contents

EXECUTIVE SUMMARY

In 1910, Abraham Flexner published an analysis on the state of medical education called *Medical Education in the United States and Canada*. In his report, Flexner included recommendations for improving the quality of medical education, with particular emphasis on the need to re-evaluate and reshape the medical curriculum to meet the changing needs of society. One hundred years later, publications such as *Educating Physicians: A Call for Reform of Medical School and Residency* (Cooke, Irby, O'Brien, & Shulman, 2010) and "A Decade of Reports Calling for Change in Medical Education: What Do They Say?" (Skochelak, 2010) are finding that an examination of medical education is needed to ensure that newly trained physicians are fully equipped with the knowledge and resources required to address societal health concerns in an age of rapid technological development and new advances in medicine.

Medical schools are responding by exploring the use of new technology to deliver content to students in engaging and dynamic ways. Virtual patients, online interactive modules, and web-based multimedia resources allow students to visualize and apply core concepts addressed by the curriculum in ways that were not possible when Flexner conducted his study in 1910. With the availability of mobile devices such as smart phones, iPods, and iPads, medical students are also learning the skills to use electronic resources with patients at the point of care.

New technological innovations and a growing user base are contributing to the proliferation of digital educational content. Recognizing the potential of the Internet to foster collaboration and freely distribute resources, more educators and researchers are participating in a growing open access movement. Modules, videos, study guides, animations, and images are being used in some courses as alternative methods for delivering educational content. These resources, referred to as open educational resources, are particularly useful in the rapidly changing field of medicine. Since textbooks available for medical courses may contain outdated information or may not be written specifically for medical students, the availability of these resources provide faculty with new opportunities to customize content appropriate for their courses.

The Florida State University College of Medicine (FSUCOM) Open Educational Resources Task Force was formed to investigate the feasibility of FSUCOM to collaborate and develop open educational resources (OERs) to be used in medical courses and clerkships. To accomplish this task, the Task Force understood that a thorough exploration of open access publishing was needed. With the idea of applying the principles of open access to medical education, task force members reviewed the current literature on open access use and development, explored digital repositories, and attended workshops addressing specific aspects of open access publishing.

The Task Force also agreed that in order to recommend the development of OERs at FSUCOM, faculty members would need to be supportive and interested in using them in their courses. As a result, the Task Force surveyed and interviewed faculty members over the course of several months. These surveys and interviews not only assessed faculty awareness and interest in OER development, but they also

provided the Task Force with an inventory of digital educational resources currently being developed by faculty and used by their students.

Task Force members recognized the importance of educating faculty about OERs, digital repositories, collaborative opportunities, and some of the challenges involved in publishing and sharing open access resources. In response, the Task Force held four workshops that provided participants with information on Florida open access initiatives and legislation, examples of OERs developed by FSUCOM faculty, Creative Commons licenses and intellectual property protection, and examples of digital repositories that may be used to publish these resources. Since FSUCOM has a collection in The Orange Grove, particular emphasis was placed on this repository during these workshops.

Survey Results

The results of the ten question survey emailed to FSUCOM faculty indicated strong support and interest in OER development and use. A total of 1735 FSUCOM faculty consisting of course directors, education directors, department heads, deans, main campus faculty, and clerkship faculty were asked to complete the survey, with 303 agreeing to participate. The number of survey participants interested in OERs was particularly encouraging, with 76.3% participants expressing interest in learning more about OERs and incorporating them into their courses or clerkships. When asked about the likelihood of using OERs, 42% indicated that they would very likely use them with another 34.3% indicating they would possibly use them. Additionally 40.3% of respondents (121 respondents) have already developed or are currently developing digital resources that could be used as OERs; of these 121 respondents, however, only 25 are willing to share these products on the digital repository, The Orange Grove. The possible reasons for this hesitancy to share are presented as common themes.

The last question on the survey asked respondents if they would be interested in participating in a follow-up study. A total of 202 FSUCOM faculty members indicated a willingness to be interviewed, but owing to time constraints, only 22 faculty members were interviewed by Barbara Shearer and Roxann Williams. These interviews provided an opportunity for more in-depth discussion on ideas for new OERs and thoughts about the development process. Some of the ideas for OERs faculty members expressed in these interviews and workshops held at the FSUCOM include:

- Geriatrics: Patient cases and scenarios focused on end of life, palliative care, and the management of chronic diseases.
- Neurology: Partnerships with clerkship faculty to develop neurology video cases or a neurology website.
- Virtual labs: Virtual labs for students to practice animal experimental surgeries in physiology courses and virtual microscopic labs for histology and microbiology courses.
- Podcasts: To complement course lectures, podcasts were suggested for patient safety, geriatrics, and anatomy.
- Patient cases: Video cases were mentioned for end of life care, rural health, clinical learning centers, chronic disease management, and neurology.

Common Themes

The results of these surveys, interviews, and workshops also revealed several common themes expressed by FSUCOM faculty. These include:

- OERs complement course lectures and assist students in independent learning.
- OERs have the ability to convey information in unique and interactive ways that cater to a variety of learning styles.
- OERs may facilitate collaboration among researchers and educators at FSUCOM and statewide.
- OERs should be considered as a legitimate form of scholarship and must be addressed in promotion and tenure guidelines.
- OERs need to be of high quality; therefore, an editorial and peer review board must be established to review resources added to the collection.
- OERs should meet educational objectives and technical standards, and some faculty will need instructional design and technical assistance.
- OERs should be free of copyright violations; therefore, faculty may need assistance in identifying and securing copyright permissions.
- OER development consumes a considerable amount of time for the producer of the content; while a number of FSUCOM faculty have dedicated a significant amount of time to create digital curriculum resources, the College must strengthen its instructional design infrastructure to move the College forward in the most cost and time effective way while ensuring consistent and high quality materials.

Recommendations

The Task Force proposes the following additional recommendations to further explore the process of OER development and to establish an infrastructure to maintain them:

Recommendation 1: The FSUCOM should recognize peer reviewed open access scholarship in the promotion and tenure process. Department chairs should strongly support open access educational scholarship by accepting OERs in specific promotion and tenure policies. The recognition of this type of scholarship is essential for providing faculty with the incentive to develop high quality OERs.

A committee should be formed to address the recognition of OERs in promotion and tenure and identify potential partners at other Florida medical schools who would be interested in forming a peer review network.

Recommendation 2: Recognizing great interest among faculty in using OERs, the FSUCOM Task Force recommends the creation of one large demonstration project to fully explore the capabilities of OERs in medical education. This project will reveal the cost of OER development and maintenance, resources needed, and the role of OERs as educational delivery mechanisms to

support the curriculum. The demonstration project will also be used to illustrate the potential of OERs to enhance collaboration among Florida medical schools.

An OER project team should be created to oversee the development of the demonstration project. It is anticipated that the project team will be closely aligned to the Office of Medical Education, with Shenifa Taite, FSUCOM Instructional Designer, as chair and project manager. In addition to the project manager, the team will include two .25 FTE instructional designers, a scholarly communications librarian/Orange Grove curator, and biomedical and clinical faculty.

The OER project team will spend the next few months identifying the topic for the demonstration project and performing a needs assessment. This needs assessment will be presented to the Dean in early 2011 and include the following:

- A proposal for any new staff needed to develop the project
- Refined topics and objectives that the demonstration project will accomplish
- A request for funds to purchase additional software and resources if it is determined that the project cannot be developed using existing FSUCOM resources.

In the Fall 2011 semester, the impact of the demonstration project will be tested and evaluated in relevant FSUCOM courses.

Recommendation 3: FSUCOM should maintain communication with the other Florida medical schools on the status of the demonstration project and future collaborative opportunities.

INTRODUCTION

In November 2009, John Fogarty, MD, Dean of the Florida State University College of Medicine (FSUCOM), formed the FSUCOM Open Educational Resources Task Force to investigate the feasibility of producing open educational resources (OERs) to support FSUCOM courses and clerkships. The formation of this task force was a response to both the skyrocketing costs of textbooks for students and the inability of the FSUCOM Maguire Medical Library to license electronic textbooks required for over half of the courses or clerkships within the FSUCOM curriculum. The primary reason these books could not be licensed was the refusal of publishers to license to libraries, preferring instead to sell to students as individual copies. The Task Force began an investigation into the potential use of OERs in medical education that included exploring models of OER development and sustainability, identifying barriers and needs, and evaluating faculty interest in using and creating OERs.

The FSUCOM Task Force on Open Educational Resources recognized the importance of creating a network of medical schools throughout Florida to increase collaboration, development, and availability of open educational resources to support medical education. In response, directors from all medical school libraries in Florida formed an additional task force called the Florida Colleges of Medicine Task Force on Open Educational Resources. The goal of this task force is to explore the feasibility of all Florida Colleges of Medicine to collaborate and produce open educational resources that support courses and clerkships taught at Florida Colleges of Medicine.

This report primarily outlines the activities and findings of the FSUCOM Open Educational Resources Task Force. Task Force members have assessed the level of interest in using, developing, and sharing OERs in medical education through surveys, individual interviews with faculty, and workshops held at the FSUCOM. The report concludes with recommendations to effectively guide the FSUCOM and other medical schools in the development of high quality OERs.

HISTORY OF OPEN ACCESS INITIATIVES

In 2002, UNESCO hosted the *Forum on the Impact of Open Courseware for Higher Education in Developing Countries* to assess the potential of online open access materials as a means of improving the quality of available learning materials worldwide. It was during this meeting that the phrase 'open educational resources' was coined. Open educational resources (OERs) are generally defined as "digitized materials offered freely and openly to educators, students and independent learners to use and reuse for teaching, learning and research" (D'Antoni, 2009, p.19). These resources can include podcasts, simulations, streaming video, dynamic electronic books, images and more.

Since the 2002 UNESCO meeting, the number of OER initiatives has increased worldwide. In the U.S., universities such as Massachusetts Institute of Technology (MIT), Rice University, and University of Michigan are currently creating, publishing, and storing OERs. The state of Florida is gaining momentum in the OER movement as well. In 2004, the Florida Distance Learning Consortium (FDLC) launched The Orange Grove Digital Repository as a platform for discovering, storing, and sharing OERs among Florida educators, students, and the general public.

In 2009, the Florida Legislature passed Statute 1004.091(2), entitled, *Open Access Textbooks*. This statute called upon the FDLC to explore open access textbooks as a means of reducing student textbook costs and improving the quality of undergraduate degree programs. As a result of this legislation, the Open Access Textbook Task Force (OATTF) was formed in July 2009 to evaluate the current open access environment and develop a plan to promote and increase the use of open access textbooks in Florida.

The OATTF presented its recommendations to the Florida legislature in the *Open Access Textbook Task Force Final Report* (2010). After surveying faculty, administrators, and students in Florida, the OATTF found that a statewide open access awareness campaign is needed. The OATTF also developed recommendations to establish an infrastructure to support and maintain OERs, encourage the creation of open access textbooks among faculty by providing a federal income tax charitable contribution credit, and establish a statewide recognition system to highlight high quality open access materials, particularly recognizing the scholarship of OERs for promotion and tenure.

The OATTF found that open access textbooks will not only significantly reduce the debt load of students, but they also have the potential to increase the quality of student education. The OATTF believes open access textbooks offer benefits such as "improved quality, flexibility and access to resources, interactive and active learning experiences, currency of textbook information, broader professional collaboration, and the use of teaching and learning technology to enhance learning experiences" (OATTF, 2010, p.i).

The release of the OATTF Final Report has since spawned more legislation in support of open access textbooks. Florida Senate Bill 1344 encourages course instructors and academic departments to consider using open access textbooks in courses. Additionally, University of Florida Provost Joseph Glover allocated funding toward the development of an open access Calculus I textbook by the University of Florida Math Department. This textbook will be class tested this fall in an honors section and used in Spring 2011 courses. A Calculus II open access textbook is being funded with a grant from

the Fund for the Improvement of Postsecondary Education (FIPSE) and will be class tested in the fall of 2011.

The FSUCOM Task Force used the final report written by the Open Access Textbook Task Force as a model for evaluating the potential use of OERs in medical education and creating recommendations for a plan to encourage their development and use in the FSUCOM.

The Orange Grove Digital Repository

As part of the FSUCOM Task Force's investigation into the feasibility of developing OERs, FSUCOM faculty members have begun contributing OER pilot projects to The Orange Grove Digital Repository. The Orange Grove houses collections of K-20 digital teaching materials that are freely available to Florida educators, and each resource is protected by a Creative Commons license that allows authors to keep their copyright while granting others permission to freely distribute and share it. The Task Force has worked with Susan Henderson, Associate Executive Director of the FDLC, to establish an FSUCOM collection in the repository. Since The Orange Grove is maintained by the FDLC and paid for by the Florida legislature, the FSUCOM may use the repository at no cost. The FSUCOM will only be responsible for the costs of additional software customizations requested specifically for the FSUCOM collection.

During FSUCOM's trial phase of uploading OERs into The Orange Grove, the Task Force approved a one-step workflow to ensure all items added to the collection are reviewed for metadata accuracy. The Task Force envisions expanding this workflow to include an editorial review board composed of clinical and basic sciences faculty, instructional designers, and librarians. This expanded workflow would verify that all resources submitted to the collection are of high quality.

The FSUCOM can directly control the accessibility of resources added to the collection. Permissions in the repository may be set to allow resources to be viewed by FSUCOM faculty, other Florida medical schools, Florida educators, or the general public. Although the majority of OERs currently housed in the FSUCOM collection are viewable only by FSUCOM faculty, the Task Force anticipates that the audience for these resources will expand once a trial phase is complete.

Other Digital Repositories

OERs may be published in multiple digital repositories. FSU has a digital repository that houses collections of historical images, dissertations, theses, departmental reports, and research. There are also subject specific digital repositories that some FSUCOM faculty are using to publish their resources. The Portal of Geriatric Online Education (POGOe) and the Family Medicine Digital Resources Library (FMDRL) are examples of repositories that specialize in storing materials related to specific medical disciplines. These repositories include peer reviewed and non-peer reviewed patient cases, videos, lectures, simulations, images, podcasts, and exercises. POGOe is also in the process of matching educational materials in the repository to medical student competencies in geriatrics. FSUCOM may look to POGOe

as a model for sharing competency-based resources as the FSUCOM collection in The Orange Grove evolves.

The Association of American Medical Colleges (AAMC) created a national repository of health-related educational materials in 2004 called MedEdPORTAL. All items in the repository are peer reviewed using a system modeled after biomedical print materials. MedEdPORTAL works in conjunction with another repository called the Health Education Assets Library (HEAL). Whereas MedEdPORTAL generally accepts complex learning objects such as syllabi, PowerPoints, and complete lessons, HEAL specializes in storing "raw assets" such as images and videos that can be pieced together as part of a complex learning object.

In the process of selecting a repository to house FSUCOM's pilot resources, the Task Force compared aspects of The Orange Grove to MedEdPORTAL. Although MedEdPORTAL is a valuable and established national resource, the Task Force believes that The Orange Grove will best serve the needs of Florida medical schools because it can be easily customized to complement the curriculum of each medical school. The Orange Grove also allows the FSUCOM and Florida medical schools to maintain control over how and when a resource is uploaded, searched, reviewed, and made publicly available.

FSUCOM TASK FORCE ACTIVITIES

FSUCOM Task Force Meetings

The FSUCOM Open Educational Resources Task Force held its first official meeting on December 10, 2009 to develop a plan to investigate the feasibility of the FSUCOM to support and develop open access textbooks. Early task force members were appointed by the FSUCOM Dean to include representation from across the College. The Task Force was later expanded to include the Associate Executive Director of FDLC, a project manager, an informatics technology specialist, and an instructional designer. (Appendix A)

Since December 2009, the Task Force held seventeen meetings. Although the initial focus was on the potential of open access textbooks to support courses and clerkships, Task Force members soon realized that open access textbooks were just one facet of a larger open access movement. Other educational objects such as podcasts, simulations, Camtasia lectures, videos, and images may be shared using the same principles as open access textbooks, yet they each offer distinct advantages. The Task Force ultimately agreed that an assessment of open access textbooks and other open educational resources was needed. Over the course of the year, the Task Force has identified opportunities, potential partners, and challenges involved in the creation and use of OERs.

The Task Force recognized that in order to move forward with a larger open access initiative, it would be essential to have the support of faculty and key administrators within the FSUCOM and the larger medical community. To assess the level of interest among faculty in developing and using OERs, the Task Force created an online survey that was emailed to FSUCOM faculty.

The Task Force believed that the next step was to compare and contrast the capabilities of established digital repositories. The Task Force examined university supported repositories, such as those maintained by Rice, MIT, and Michigan University, in addition to national and state supported repositories, such as MedEdPORTAL and The Orange Grove. Recognizing the complexity of creating a digital repository from scratch, the Task Force decided that the use of an established digital repository, such as The Orange Grove, would allow the FSUCOM to focus resources on other aspects of OER development and dissemination.

To ensure that resources of high quality are added to the FSUCOM collection in Orange Grove, the Task Force agreed that an editorial board must be formed to review the content of new resources submitted to The Orange Grove. Resources would be reviewed for content accuracy by clinical and biomedical faculty, checked for usability and clarity by an instructional designer, and thoroughly described and cataloged in the repository by a librarian. The Task Force believes additional reviewers may be needed to identify unintentional copyright violations and provide assistance in securing copyright permissions.

In addition to creating an FSUCOM editorial review board, the Task Force recognizes that an external peer review system composed of faculty members from all Florida medical schools must be established to provide an unbiased assessment of content quality. Until this peer review network is established, the

Task Force agreed that course content within the FSUCOM collection should be kept internal and not made publicly accessible.

In order to maintain consistency within the FSUCOM collection, each OER added to the repository must have a standardized format. A template should be developed to include a digital rights statement identifying the author and outlining the intended use and purpose of each resource added to the collection. The Task Force recommends the development of a style manual to ensure all content is displayed with a unified theme.

The review process developed to ensure the quality and consistency of resources added to the FSUCOM's collection in The Orange Grove will include:

- Editorial Review
- Branding and Standardization
- Peer Review of Content

In an effort to inform key administrators at the FSUCOM, members of the Task Force held a meeting with the Associate Deans in March 2010. This meeting provided an opportunity to explain the goals of the Task Force and offer an overview of the issues related to the publication of open access resources. All attendees expressed support of OER development in the FSUCOM and across the state. There was a consensus that with instructional design and copyright assistance, OERs will serve as a means of rounding out the curriculum with resources that meet the needs of students. The Associate Deans also emphasized that a peer review system must be established in order for OERs to be recognized as genuine scholarship.

Special Meetings

Equella
Barbara Shearer, Roxann Williams, and Mary Johnson met with representatives from Equella, the software that runs The Orange Grove Repository, to discuss how Equella and The Orange Grove may be customized to meet the needs of the FSUCOM. As a result of these discussions, Equella has added Medical Subject Headings (MeSH) to its list of controlled vocabularies that previously only included Gateway to Educational Materials (GEM) and Education Resources Information Center (ERIC). The addition of the MeSH vocabulary will enable faculty and students to locate resources easily on a designated medical topic.

Members of the Task Force worked with Robin Donaldson, Project Manager for The Orange Grove, on adding new metadata fields to the repository that thoroughly describe resources added to the FSUCOM collection. For example, peer review categories were added to describe whether an item was peer reviewed, not peer reviewed, or was a faculty reviewed student-created resource. Another

customization included the addition of learning styles, so that resources may be searched for those identified as being suitable for visual learners, auditory learners, or kinesthetic/tactile learners.

One of the more recent modifications to the FSUCOM collection includes the addition of medical competency fields. These fields allow each resource added to the repository to be associated with one or more of the 6 medical competencies assigned to the curriculum. This association provides repository users with the ability to search for resources that meet specific competencies.

On August 31, 2010, Shearer and Williams spoke with Butch Porter, Southeast Regional Sales Manager for Equella, and Greg Devine, Lead Consultant for Pearson Equella, about more extensive customizations to FSUCOM's collection. Equella could be customized to generate usage reports on each item in the FSUCOM collection to demonstrate its value in promotion and tenure portfolios. Porter and Devine were also supportive of establishing an infrastructure within The Orange Grove that would allow Florida medical schools to share resources with one another. One possibility would be to create one primary medical school collection where each Florida medical school could contribute resources and view others through permissions set in the metadata.

Florida State University Libraries
On July 15, 2010, Barbara Shearer and Roxann Williams held a meeting with Mark Stoffan, FSU Associate Director for Technology, and Plato Smith, FSU Digital Library Head, to discuss the management of FSU's Institutional Repository. The main FSU library is using software called DigiTool to manage an institutional collection of digital theses, dissertations, videos, and images that can be searched using the FSU online library catalog. All of the items in the repository are available to the public and are archived in the Florida Digital Archive.

Stoffan and Smith recommended that the Task Force establish standards for archival preservation procedures and acceptable digital formats. We need to ensure that items added to The Orange Grove repository will be accessible in a continually evolving technological environment. Stoffan believes that the preservation of all the medical collections in a digital repository would require a team of people including programmers and a project director.

Recognizing the growing interest in institutional repositories, open access publishing, and other collaborative research and academic activities, librarians from the FSU Libraries have formed a scholarly communications task force. Barbara Shearer and Roxann Williams are members of this task force. The goal of the task force is to increase the awareness of open access publishing among FSU faculty, students, and staff. In an effort to accomplish this goal effectively, the larger FSU Libraries scholarly communications task force is divided into 3 smaller groups: an educational activities group, a planning group, and an environmental scan group. With the support of FSU library directors, this scholarly communications group will present a proposal in the fall of 2010 to the Faculty Senate Library Committee for the creation of an official FSU Scholarly Communications Task Force.

University Press of Florida

The University Press of Florida (UPF) is the non-profit official publisher for the State University System (SUS). In addition to possessing all of the characteristics of a professional American publisher, UPF has an editorial board that includes one senior/distinguished faculty member from each SUS campus. UPF provides developmental editorial, design, copyediting, copyright, and production services and expertise. UPF has the resources to assist in the development of both print and electronic textbooks, manuals, and other publication formats.

Members of the FSUCOM Open Educational Resources Task Force met with Meredith Babb, Director of the University Press of Florida on July 26, 2010. Babb mentioned that it may be possible to contract with UPF to outsource peer review services. Furthermore, UPF could provide an infrastructure that would generate royalties through print-on-demand purchases. Royalties generated by these textbooks can be returned to the producer of the content for future maintenance of these books.

Florida State University Bookstore

On March 29, 2010, Barbara Shearer met with Paul Strouts, Associate Vice President for FSU's Finance and Administrative Department responsible for overseeing operations of the FSU Bookstore. This meeting was an informational session about the statewide Open Access Textbook Task Force and an opportunity for Shearer to provide Strouts with the objectives and timeline of the FSUCOM OER Task Force.

Creative Commons Webinar

On May 6, 2010, Barbara Shearer and Roxann Williams attended a webinar on Creative Commons licenses and their role in the development of OERs. This webinar was supported by FIPSE and was presented by Timothy Vollmer, Creative Commons Open Policy Fellow, and Lila Bailey, Creative Commons Counsel.

The webinar explained that Creative Commons licenses provide authors of open access resources with a means to protect their intellectual property legally and easily. Creative Commons licenses allow resources to be used in a more flexible manner than those protected under standard copyright. Creators of resources have the option to create a customized Creative Commons license by selecting a combination of four main conditions: Attribution, Non-Commercial, Share Alike, and No Derivative Works. Because of their flexible terms, the purpose of Creative Commons licenses is well aligned with the goals of OER initiatives; both promote an educational environment where resources can be shared and customized among institutions.

Scholarly Communication 101 Workshop
Barbara Shearer and Roxann Williams attended an Association of College and Research Libraries (ACRL) scholarly communication workshop on July 9, 2010. This one-day workshop addressed aspects of open access, copyright and intellectual property, the economics of publishing, and Florida scholarly communication activities.

FSUCOM Attorney
Since the Task Force and other FSUCOM faculty had concerns about the intellectual property rights for OERs created with university resources, Barbara Shearer and Roxann Williams met with the FSUCOM attorney, Robert Jurand, on June 14, 2010. Since OERs are not addressed specifically in an FSU copyright and intellectual property policy, Jurand suggested that we meet with Betty Southard, Legal Counsel of the FSU Office of the Vice President of Research, to discuss concerns about intellectual property and OERs. In cases where OERs are created by faculty members using university resources, it may be possible that these resources will be protected under a joint copyright owned by the faculty member who created the resource and the university.

Software Development Outsourcing
The Task Force believed it was necessary to assess the resources currently available to FSUCOM faculty and staff that could be used in the creation of OERs. At the same time, the task force members thought it was important to investigate the possibility of outsourcing services using companies that could offer additional software resources, review expertise, and programming assistance.

On June 28, 2010, Task Force members met with a software development company that provides assistance with media design, programming, needs assessment, and instructional design. During this meeting, the Task Force and representatives from the company discussed how their consulting and multimedia services could support the goals of the Task Force. Company representatives suggested that a needs assessment be conducted in order to determine which resources at the FSUCOM could be used to develop a demonstration project, as well as identify resources that could be subcontracted. For example, if needed, the company could provide illustrators, animators, programmers, and instructional designers that could facilitate the development of a larger OER demonstration project. It may even be possible to use a fee for service and pay the company specifically to secure and identify copyright permissions or locate reviewers to participate in a peer review network.

It was suggested that the possible course of action for the creation of a large OER demonstration project could include two phases. The first phase would involve conducting a needs assessment to construct a plan for the development of a project using existing and new resources. The second phase would consist of implementing the plan produced during phase one. Company representatives suggested that the FSUCOM develop a focused project with components that would relate to several courses in the medical curriculum. A project that could appeal across the basic sciences into clinical care may be the most effective use of resources during this demonstration.

Since the Task Force met with only one software and multimedia company that could assist the FSUCOM in the development of a project, the Task Force suggests meeting with other companies that offer similar services in the future.

SoftChalk

The Task Force recognizes that there is interest among faculty in participating in the creation of smaller OER projects to support their courses without the need for complex programming skills. In an effort to explore tools other than Camtasia and Captivate that could assist faculty in developing smaller OERs, members of the Task Force attended a webinar on SoftChalk, a lesson editor that can create web-based lessons without requiring any knowledge of web development or HTML. SoftChalk is promoted as a tool that supports e-learning, since its software easily assembles pieces of educational resources into one unified lesson and is compatible with Blackboard and The Orange Grove. SoftChalk can integrate interactive components into these lessons, such as self-assessments, quizzes, and games that reinforce concepts discussed by the resource. SoftChalk also provides a quick way to label images and add pop-up text annotations with definitions in a professional looking module. SoftChalk is one tool the FSUCOM could purchase to facilitate the development of smaller independent OER projects.

Workshops and Informational Sessions

The FSUCOM Open Educational Resources Task Force hosted two types of workshops on The Orange Grove repository. During the months of April-June 2010, three introductory workshops were held to provide attendees with general information on the capabilities of The Orange Grove, background legislation that support open access initiatives, and examples of OERs that had been previously uploaded to the repository. One additional hands-on workshop was held to provide faculty and staff with an opportunity to familiarize themselves with the process of adding resources to the repository. In addition to informing faculty at these workshops, Shearer presented on this topic at the Year 1-2 and Year 3-4 Curriculum Meetings.

These workshops not only served as a means to educate faculty about OERs and the potential of The Orange Grove, but they also provided an arena for faculty to discuss their thoughts and share their ideas for projects they would like to create or use. Some common ideas for OERs included the production of video clips on various topics ranging from case studies for students to faculty development topics for main campus and clerkship faculty. Animations were popular ideas among the basic sciences faculty since animations provide a way to visualize some concepts that are difficult to express using text alone.

The general consensus among workshop attendees was that although many faculty members have ideas for new OERs, FSUCOM currently lacks the resources needed to develop them into polished finished products that may be shared with other schools and institutions. Faculty expressed a need for filming equipment, video editing assistance, illustrators, graphic designers, animators, and photographers. One of the workshop attendees, R. E. LeMon, Associate Vice Chancellor of the Florida Board of Governors,

also commented on the need for 21st century multimedia tools and staff assistance for the development of electronic educational content.

Workshop attendees were very supportive of the collaborative potential of The Orange Grove. Using The Orange Grove as a mechanism for storing and sharing content, faculty believe that the Florida medical curriculum could benefit from a network of medical schools that could each specialize in the development of resources in which they are leaders in the field.

Open Educational Resources Survey

To evaluate the amount of interest in OERs at the FSUCOM, a ten question survey was created by the Task Force and emailed to FSUCOM course directors, education directors, department heads, deans, main campus faculty, and clerkship faculty. The survey was sent to a total of 1735 faculty, and 303 faculty members chose to participate in the survey. With the exception of clerkship faculty, the survey revealed that more than half of faculty were familiar with the concept of OERs. When asked how likely they would be to use OERs in teaching, 76.3% of participants responded that they would either possibly use them or would very likely use them in the future.

Similarly, 76.3% of faculty participants indicated that they would be interested in learning more about OERs and incorporating them into their courses or clerkships. According to the results of the survey, 40.3% of the respondents have already developed digital resources, but of these only 25 respondents are willing to share these products in The Orange Grove.

The three charts that follow highlight significant findings from the survey. Chart 1 displays the data gathered for the survey question, "Are you interested in learning more about developing OERs and incorporating them into your course or clerkship learning environment?" Chart 2 addresses faculty perceptions on how important FSUCOM's exploration of OERs is, and Chart 3 shows how likely faculty members are to develop OERs. Complete survey results can be found in Appendix B.

Chart 1

FSUCOM Faculty Interested in Learning More About OERs

90.9%

78.6%

73.8%

9.1%

21.4%

23.7%

- Yes
- No

Directors & Administrators (n=33)

Full-Time Faculty (n=42)

Clerkship Faculty (n=225)

Chart 2

Importance to FSUCOM

	Directors & Administrators (n=33)	Full-Time Faculty (n=42)	Clerkship Faculty (n=225)
Low	3.0% (1)	0.0% (0)	3.1% (7)
Average	27.3% (9)	31.0% (13)	38.7% (87)
High	48.5% (16)	59.5% (25)	51.1% (115)
Very High	21.2% (7)	9.5% (4)	7.1% (16)

Chart 3

Faculty Very Likely to Develop OERs if Given Institutional Recognition/Credit by Specialty

Legend:
- Biomedical Sciences
- Emergency Medicine
- Faculty Development
- Family Medicine
- Geriatrics
- Health Affairs
- Informatics
- Internal Medicine
- Medical Education
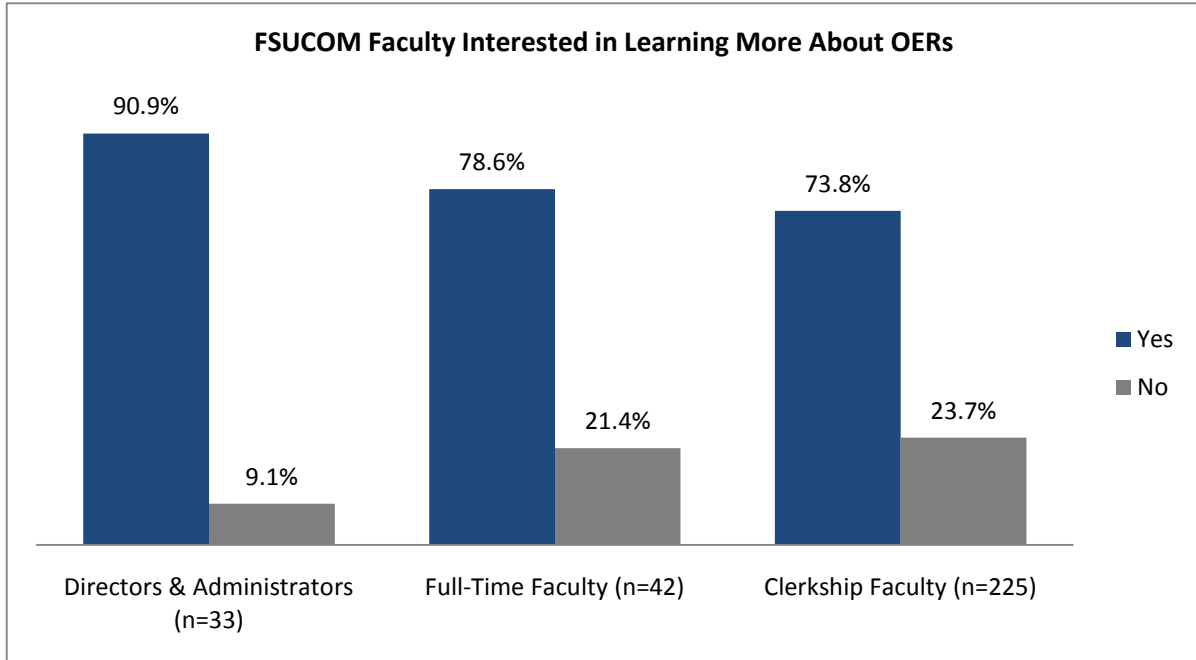- Medical Humanities
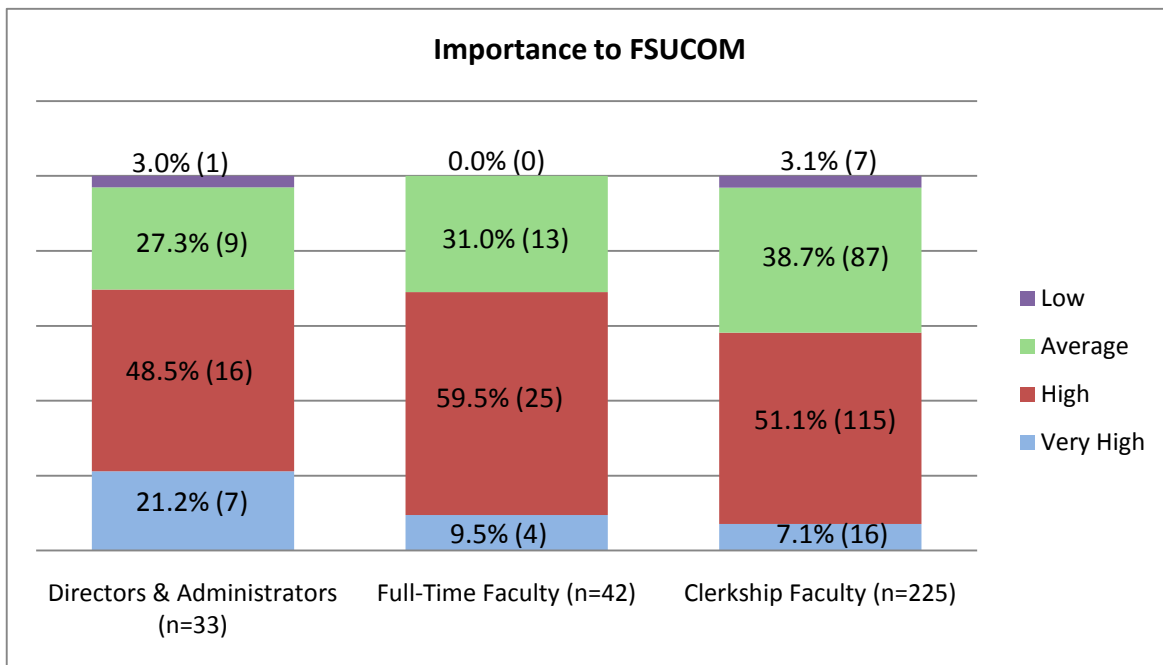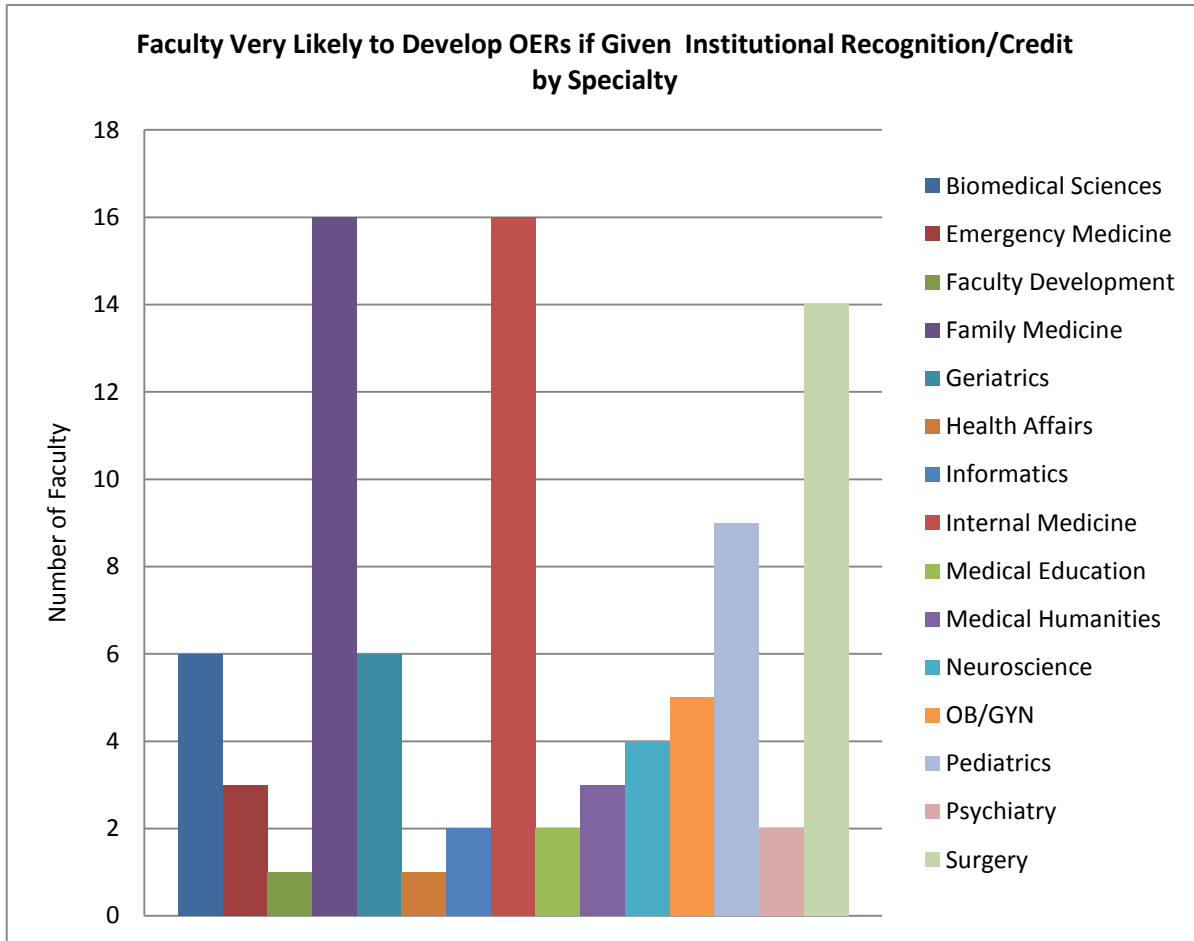- Neuroscience
- OB/GYN
- Pediatrics
- Psychiatry
- Surgery

OERs and Independent Learning

The survey provided participants with an opportunity to leave comments and ask questions about OERs. The comments written by survey participants were positive and supportive of OER use by faculty and students. Many participants alluded to the valuable benefits of OERs in medical education and expressed an interest in learning more about OER development.

Some survey participants commented that OERs represent an aspect of a new movement affecting the way education is delivered. OERs are perceived by some to complement lectures and text-based information, allowing students to study material at their own pace during independent study. Many participants commented that providing visual resources such as animations, images, slides, and graphs allow information to be more engaging and can improve student understanding.

Copyright, Instructional Design, and Technical Assistance
The comments provided in the survey revealed many of the same issues discussed in the Orange Grove workshops. Some respondents mentioned concerns over the amount of time required to develop these resources and the ability to identify copyright restrictions. Many expressed interest in attending faculty development training sessions or lectures on creating OERs and incorporating them into teaching. Suggestions also included providing resources to assist faculty in the creation of OERs, such as the borrowing of audio/video equipment and instructional design guidance.

Other Uses of OERs: Clinical Settings and Faculty Development
OERs are also perceived as being useful outside of the classroom. For example, one participant mentioned that with mobile devices such as the iPhone, OERs may be particularly useful in clinical settings with patients. The comments revealed that OERs may benefit student education as well as contribute to faculty continuing education.

FSUCOM Faculty Interviews

The last question on the survey asked if participants would be willing to participate in a follow-up study on OERs. For those that expressed an interest in discussing OERs further, particularly their thoughts on the development and use of OERs, Barbara Shearer and Roxann Williams interviewed these faculty members and recorded key points from the interviews. A total of 202 survey participants indicated that they would be interested in participating in a follow-up study, but owing to time constraints, only 22 were interviewed. These interviews revealed several common themes related to the potential benefits of OERs, their use in medical education, and some of the challenges that should be addressed.

OERs Complement Course Lectures and Textbooks
Overall, faculty were supportive and enthusiastic about the educational possibilities of OERs as a way to supplement the curriculum. In addition to reading textbooks, faculty believe that students are using other methods to help them absorb the information. Students may rely more on lecture notes, slides, Camtasia videos, and websites. Podcasts and videos can be used in conjunction with lectures to provide a rich and interactive experience that incorporates audio and visual components not possible with print books. John Van Wingen, PhD, Assistant Dean and Director of Information Management at the FSUCOM, suggested that since education is moving beyond a system that uses textbooks, "We should begin to create learning modules that could fit into the curriculum, labs, or could assist with training." Additionally, since the medical field changes quickly, textbooks may not provide students with the most current information because of a lengthy and cumbersome publication process.

OERs Provide New Outlets for Disseminating Research

Faculty agreed that the open access movement can provide an arena where scholars can quickly share their ideas and research findings with the world. The flexible nature of open access formats means that new information can be rapidly disseminated and may evolve as new discoveries are made. OERs have the potential to reach large audiences, which can in turn provide authors of OERs feedback on the usefulness and accuracy of their information. Faculty also believed that removing some of the restrictions imposed by established publishers could provide both students and faculty with an opportunity to publish research findings quickly and receive larger recognition for their work. Faculty would have an opportunity to express their findings in their entirety, without having to be concerned about limiting the amount of text for an article/book chapter or reducing the amount of information contained within supplemental charts and graphs.

OERs Facilitate Collaboration

Many faculty were excited by The Orange Grove's potential to increase collaborative opportunities. An open forum may provide a larger audience to promote research findings and identify other scholars with similar research interests. With a network of Florida medical schools willing to participate in developing and sharing OERs, each medical school could develop a module related to a particular topic in which each specializes.

OERs have the potential to strengthen collaborations among not only medical schools, but also departments and medical disciplines. One area that OERs may particularly benefit is translational research. Since FSUCOM has a strong team of clinical scientists and basic scientists, one possibility is to develop an OER that supports translational research as an integrated component of the existing curriculum.

New partnerships among clerkship faculty, full-time faculty, and students may also be facilitated through the development of OERs. Since clerkship faculty may be able to provide critical objects such as images and videos that result from their close relationship with current patients, the inclusion of clerkship faculty in the development of OERs could provide them with new ways to participate in FSUCOM educational activities.

Instructional Design Assistance

In order to develop high quality OERs that meet educational objectives, faculty expressed interest in working with an instructional designer. Many faculty had ideas for OER resources, but they were not sure how to convert them into usable educational objects. With the aid of an instructional designer who could guide faculty toward the appropriate tools and formats suitable for the development of medical educational resources, the amount of time required of faculty to create these resources could be reduced and at the same time, the quality of these resources will be improved. Maggie Blackburn, MD, FSUCOM Director of Rural Health, said that in order for this initiative to grow, "It is important to give people the time, space, and credit to develop OERs." Blackburn also stressed the importance of creating high quality material.

Copyright Assistance

Faculty mentioned concerns about identifying copyrighted material and obtaining copyright permissions. Some faculty members have created Camtasia videos on certain topics, but they are incorporating pieces of library licensed material and other copyrighted resources. Faculty are hesitant to make these resources publicly available because they either need assistance in identifying copyright restrictions, or they need additional resources to replace copyrighted images, graphs, or animations.

Promotion and Tenure

Faculty members believe that recognition of OERs in promotion and tenure guidelines is one of the more dominating challenges in OER development. When creating OERs, faculty would like to receive credit for them in their promotion and tenure portfolios, but OERs are either not acknowledged in promotion and tenure policies, or they are given little weight. Faculty suggested that representatives from each medical school in Florida be selected to participate in a peer review network that would give OERs credibility. Daniel Van Durme, MD, FSUCOM Professor and Chair of Family Medicine and Rural Health, suggested that since "There are not enough faculty in FSUCOM to provide a sufficient peer review system, we would need to draw faculty from other medical schools to participate in a larger peer review system."

OERs Support Independent Learning

Some faculty suggested that The Orange Grove may assist in meeting the Liaison Committee on Medical Education (LCME) requirements by providing a place where curriculum materials and their objectives can be easily located. By using a digital repository that can be accessible to students regardless of their physical location, FSUCOM could ensure that all students at each regional campus are receiving the same quality content. The LCME also requires the inclusion of self-directed learning in the curriculum. OERs could be developed with this objective in mind by incorporating videos, case studies, and podcasts that appropriately guide students in an engaging manner outside of the classroom. Students would be asked to complete an assessment form for these resources as a method of evaluating their effectiveness.

Ideas for Open Educational Resources

In these interviews with faculty, many agreed that the development of an OER demonstration project would be a good approach for identifying costs and other factors involved in polishing and preparing their resources for statewide distribution as OERs.

Patient Cases

Patient cases were a common type of resource that several faculty members expressed interest in using or developing. Patient cases could be created for a number of scenarios, such as end of life care, chronic disease management, Alzheimer's disease, and professionalism. One faculty member mentioned that the creation of cases can be overwhelming since there are many aspects to consider. If faculty across medical schools from each department shared patient cases and contributed toward the development of new ones, this collaboration could reduce the time required of each faculty member to create them, while at the same time producing well-rounded quality cases.

Simulations

The creation of patient simulations was also mentioned as a possibility by several faculty members. Since real patients may be difficult to recruit for interviews and follow-up visits, particularly in the area of end of life care and chronic disease management, simulated patients may offer an alternative solution. These simulations could also ensure that students are receiving consistent experiences that are aligned with curriculum objectives. Meredith Goodwin, MD, Course Director for the Doctoring 1 course, is currently developing a project in Second Life that would allow third year students to interact with simulated patients to manage common chronic diseases over time. In Second Life's virtual world, these student-simulated patient interactions would then be captured for scoring and feedback.

Virtual Labs

Among the basic sciences faculty, one common interest was the creation of virtual labs. For physiology courses in particular, less emphasis is placed on hands-on practice performing surgeries or conducting experiments on animal specimens, and instead the textbook is becoming the primary resource. Basic sciences faculty believe that recreating hands-on experiences using a virtual environment would be valuable in supplementing the text-based information. Another idea is to develop a virtual microscopic lab that would provide students with an opportunity to identify diseases based on cell diagnosis.

Point of Care Resources

FSUCOM should also consider developing point of care and clinical mobile resources. The cost of popular resources are high, since publishers do not sell them as site licenses, but as volume discounts based on individual subscription prices. Currently, Florida medical faculty are writing content for these resources using college resources, but these colleges are unable to access this

content because of prohibitive costs. In response to these concerns, one option is to develop similar resources using the content expertise of Florida faculty. By sharing resources, Florida faculty may collaborate on the development of similar resources that could be used by all faculty and students for no cost.

Special Considerations

The challenges of the ideas mentioned above involve the process of converting them into a format suitable for distribution in The Orange Grove as OERs. Even though it is possible to shape an existing resource with copyrighted material into an open access resource, the best approach would be to create new resources with the idea that their purpose is not to remain housed within the Blackboard site of just one faculty member, but that it will be shared. With the inclusion of FSUCOM branding on these resources, the College's effort in sharing information and resources with the medical community and the general public will be recognizable.

Specific Ideas for OER Projects

Below are ideas for OER projects that FSUCOM faculty members are interested in using and developing. These topics were gathered during interviews and workshops held at the FSUCOM.

- **John Agens (Geriatrics Clerkship Director, Tallahassee Regional Campus)**: Patient cases and interactive vignettes on end of life and palliative care.

- **Dennis Baker (Associate Dean for Faculty Development):** Videos of physicians demonstrating motivational interviewing skills.

- **Maggie Blackburn (Director of Rural Health):** Patient cases and an open access textbook on rural health.

- **Ken Brummel-Smith (Chair, Department of Geriatrics):** Podcasts and videos of patients that relate to Geriatrics course lectures.

- **Debra Danforth (Director, Charlotte E. Maguire, M.D. and TMH Clinical Skills and Simulation Center)**: Case studies to be used in clinical skills and simulation centers in Florida medical schools.

- **Meredith Goodwin (Course Director, Doctoring 1)**: Virtual environment simulations and case studies designed to help students learn to manage patients with chronic diseases.

- **Mary Johnson (Associate Dean for Medical Education)**: Tutorials for systemic microbiology and eLabs for lab concepts in medicine.

- **Kathy Lee (Education Director, Psychiatry)**: Student-created psychiatry "quick reviews". Students will create a review sheet on a particular topic related to psychiatry, and these review sheets could be assembled into a resource placed in Orange Grove.

- **James Olcese (Associate Chair for Medical Undergraduate Education)**: Virtual lab for physiology courses. Students could perform virtual surgeries and experiments on animals.

Olcese is also interested in creating an Alzheimer's module that could focus on the etiology of the disease.

- **Graham Patrick (Assistant Dean for Admissions) and Gail Galasko (Professor of Biomedical Sciences)**: Pharmacology teaching website with case studies and questions and answers.

- **Steve Quintero (Physician Advisor for Medical Simulation)**: An interactive EKG workbook that could include avatars, video clips, podcasts, or animations.

- **Lynn Romrell (Associate Dean for Curriculum Development and Evaluation)**: Self instructional modules on radiographics anatomy and 3rd year clinical cases focused on diagnostic imaging and radiology.

- **Curt Stine (Director of Clinical Programs and Associate Chair, Department of Family Medicine)**: Activities that support professionalism and the student consultation referral program. A database could be developed to search and store student reflective writing on how to improve communication between physicians and patients during the referral process.

- **Dennis Tsilimingras (Director, Center on Patient Safety)**: Podcast or simulation on patient safety.

- **Jake Vanlandingham (Assistant in Medicine)**: A "virtual microscopic lab" for a histology or molecular biology course. There could be a virtual cancer lab, neurodegenerative lab, etc. with cases based on cell diagnosis. Vanlandingham would also like to create a Second Life environment with patient cases.

- **Edward Valenstein (Professor):** A neuroscience website with case-based presentations.

Major Themes from Interviews and Surveys

The supportive feedback received in the interviews and 76.3% of survey respondents indicating that they would like to know more about OERs, suggest that there is great interest among faculty in developing and using OERs.

Common themes expressed by faculty include:

- OERs complement course lectures and are perceived as valuable for independent student learning.

- OERs may convey concepts in a visual manner that is not possible with print books.

- Faculty members need instructional design and technical assistance that would allow them to create effective OERs.

- Faculty members need assistance identifying and securing copyright permissions.

- OERs may facilitate collaboration among researchers and educators.

- OERs should be considered as a legitimate form of scholarship and should be addressed in promotion and tenure guidelines.

- The time it takes faculty to create OERs should be formally allocated in job responsibilities.

FLORIDA COLLEGES OF MEDICINE OPEN EDUCATIONAL RESOURCES TASK FORCE

The library directors from each Florida medical school formed a task force to explore OERs as an alternative means of delivering educational resources to support the curriculum. Libraries are finding it difficult to license electronic textbooks required for courses and clerkships as more publishers choose to sell them only to individual subscribers. Since the Florida Colleges of Medicine libraries strive to provide as many electronic resources as possible to students, the task force perceives OERs as a possible solution to some of the restrictions publishers are placing on educational content.

Members of the Florida Colleges of Medicine OER Task Force believe that the support of a larger OER demonstration project is needed in order to generate more interest among medical faculty across the state. The next steps of this task force will be to survey faculty at each Florida medical school on their thoughts about using and creating OERs, and to use an FSUCOM supported OER pilot project to demonstrate the cross-collaborative possibilities using The Orange Grove. This demonstration project could identify possible collaborators and costs for a future joint collection of OERs to be used across all of the Florida medical schools.

SPECIAL ISSUES

Promotion and Tenure

The results of the survey and follow-up interviews with FSUCOM faculty and administrators revealed that credit for promotion and tenure is of high concern. Recognizing the fact that little if any credit will be given for OERs published in digital repositories, some faculty are hesitant to devote time toward their development, choosing instead to pursue more traditional forms of publication. The FSU Promotion and Tenure Policy does not explicitly mention digital scholarship. This policy can be located at http://facultyhandbook.fsu.edu/section5.html#s5a5. With the understanding that an FSUCOM approved policy recognizing digital scholarship should be consistent with the university's promotion and tenure policy, the Task Force believes that a university-wide discussion regarding the re-evaluation of OERs as forms of legitimate scholarship is needed.

A recent article on the increasing use of e-learning resources (such as animations, websites, multimedia tutorials, and simulations) among medical educators to enhance student learning, suggests that the promotion and tenure committees of medical schools re-evaluate the way these forms of teaching scholarship are viewed and valued (Ruiz, Candler, Qadri, & Roos, 2009). The Task Force understands that OERs published in national or state repositories may not receive the same level of recognition and credit as scholarly material published in established national publications. Nevertheless, OERs should be given due consideration in promotion and tenure portfolios as an alternate means of sharing research and contributing to a larger body of educational and teaching scholarship.

The FSU Promotion and Tenure Policy emphasizes the importance of using promotion and tenure portfolios to demonstrate that a faculty member is either becoming or has become a recognized scholar in his or her field. With the appropriate measures in place, OERs have the potential to demonstrate this recognition. The traditional peer review criteria originally designed to gauge the quality of information produced in print publications will need to be modified to include measures for "usability, navigation, interactivity, and delivery" (Ruiz et al., 2009, p. 51).

In an effort to address the recognition of digital scholarship in promotion and tenure across the state of Florida, Susan Henderson is beginning conversations on the formation of a statewide promotion and tenure committee. Additionally, Henderson said that "Beginning conversations are occurring about how to establish an award program for digital scholarship and innovation in the state of Florida such as those that the Ohio Learning Network and other groups around the country offer."

Copyright

Another issue of particular concern to faculty is copyright. Uncertainty regarding the applicability of copyright restrictions was often expressed by faculty in the surveys and follow-up interviews. Although many faculty have created their own electronic resources to complement their course lectures, these resources were primarily developed for the purpose of remaining internal and accessible only to

FSUCOM students via Blackboard. Once a medical student has graduated or the Blackboard site is no longer available, students can no longer access content from these resources. For this reason, in addition to the possibility of collaborating with faculty at other medical schools on new resources, faculty expressed interest in allowing their resources to be shared with a larger audience.

Even though some FSUCOM faculty were willing to share their resources in The Orange Grove, the incorporation of library licensed copyrighted images, diagrams, charts, and graphs into these resources prevent them from being shared publicly. Faculty expressed doubts over whether or not certain images and graphs were copyrighted. In some cases, faculty members were adding interactive components to library licensed images, but were unsure of the copyright status of these resources after they had been modified.

Sustainability

The Task Force recognizes the importance of preparing for the sustainability of the FSUCOM collection and its continued management. If FSUCOM chooses to utilize The Orange Grove Repository to house OER content developed by FSUCOM faculty, no fees will be requested of FSUCOM for the maintenance of the repository software. On the other hand, FSUCOM should prepare a model of sustainability to support ongoing development and maintenance of OERs produced at the College. Several models of sustainability proposed in the OATTF Final Report may be applicable to FSUCOM as well. These include:

- Institutional Support: FSUCOM could provide funds to individual departments to develop OERs or open access textbooks. A partnership with UPF would provide a system in which negotiated royalties generated from print-on-demand textbook purchases could be returned to these departments for continued development. Another possibility would be to generate revenue through the sale of iPad applications developed by FSUCOM.

- Collaboration: FSUCOM could participate in a network of Florida medical schools that would share the cost of creating and maintaining OERs to be used in medical education. These schools may each specialize in developing specific OERs that could be used by all schools, or similar departments from each school may collaborate on the development of larger, more complex OERs.

- Technology Fees: A portion of the technology fees paid by students could be allocated toward the maintenance of open access textbooks and OERs required for courses.

FUTURE DIRECTIONS FOR FSUCOM

Collaboration

The Florida Consortium of Clinical Skills and Simulation Centers is in the process of planning a pilot collection to demonstrate the benefits of increased collaboration among medical schools using The Orange Grove. Consortium members from Florida State University, University of Florida, University of Central Florida, and Nova Southeastern University are all using Emergency Management Solutions (EMS) Arcadia software to create clinical case studies, and they will use the pilot Orange Grove collection to upload and share these cases with one another if successful. The Consortium's collection represents the first instance of the task force's larger vision of creating a network among medical schools to share existing resources and participate in the development of new ones.

Demonstration Project

FSUCOM faculty members have already begun developing electronic educational resources with the idea that they may be shared with other educators and institutions. Tools such as high definition flip cameras, iPods, and the interactive presentation software of Camtasia and Captivate, will allow faculty to create their own educational resources and deliver content to students that satisfy a range of learning styles. For example, Michele Manting and Charlie Ouimet have created resources in Camtasia that are suitable for both auditory and visual learners. In addition to supporting the development of smaller OER projects within FSUCOM and polishing up existing faculty-created resources to be shared as OERs in The Orange Grove, the Task Force agrees that the next step for the FSUCOM is to develop one large demonstration project. The objective of this project will be to demonstrate how OER projects can be created, supported, and used in medical education.

The Task Force discussed several approaches for identifying topics in the curriculum that would benefit most from the development of a large OER project. The Task Force agrees that the demonstration project should appeal across the curriculum and satisfy multiple competencies for medical students. Another approach may be to identify concepts that are underrepresented in the curriculum and develop a project to strengthen these areas. During the course of interviews with individual faculty members, many suggested that FSUCOM create a demonstration project that utilizes the strengths of the College and subject expertise of its clinical and basic sciences faculty.

The Task Force has identified the following areas as potential topics for a focused demonstration project:

- Geriatrics
- Neuroscience
- Patient Safety
- Management of chronic diseases
- Rural health

Recommendations

The FSUCOM Open Educational Resources Task Force proposes the following recommendations for the continued exploration of OER development:

Recommendation 1: FSUCOM should recognize peer reviewed open access scholarship in promotion and tenure. Department chairs should strongly support open access educational scholarship by accepting OERs in specific promotion and tenure policies. The recognition of this type of scholarship is essential for providing faculty with the incentive to develop high quality OERs.

A committee should be formed to address the recognition of OERs in promotion and tenure and identify potential partners at other Florida medical schools who would be interested in forming a peer review network.

Recommendation 2: An OER project team should be created to oversee the development of one large OER demonstration project. It is anticipated that the project team will be closely aligned to the Office of Medical Education, with Shenifa Taite, FSUCOM Instructional Designer, as chair and project manager. In addition to the project manager, the team will include two .25 FTE instructional designers, a scholarly communications librarian/Orange Grove curator, and biomedical and clinical faculty.

The OER project team will spend the next few months identifying the topic for the demonstration project and performing a needs assessment. This needs assessment will be presented to the Dean in early 2011 and include the following:

- A proposal for any new staff needed to develop the project
- Refined topics and objectives that the demonstration project will accomplish
- A request for funds to purchase additional software and resources if it is determined that the project cannot be developed using existing FSUCOM resources.

In the Fall 2011 semester, the impact of the demonstration project will be tested and evaluated in relevant FSUCOM courses.

The project team will also be responsible for accomplishing the following tasks in the process of developing a demonstration project:

- Establish criteria for resources added to the FSUCOM collection to ensure they are of high quality. The project team will document procedures in preparation for a future editorial board.
- Investigate the process of integrating Equella into Blackboard. This integration would allow faculty to access content in The Orange Grove through Blackboard.

- Work with Equella to customize the software to meet the needs of FSUCOM.
- Address the legal implications of open access publishing by developing patient consent forms for clerkship faculty to use when recording patient interactions to be distributed in The Orange Grove.
- Develop tools that would assist in creating a pipeline of future OER projects. A procedure must be established to allow faculty members to continually request assistance for projects or submit proposals for new OER ideas. These proposals will then be reviewed by a project team to determine the objectives and perform a needs assessment.

Recommendation 3: FSUCOM should maintain communication with the other Florida medical schools on the status of the demonstration project and future collaborative opportunities.

CONCLUSION

The FSUCOM Open Educational Resources Task Force believes that OERs can effectively deliver educational content to support the medical curriculum. The current technological environment provides new opportunities to present information using engaging and interactive digital formats that appeal to a variety of learning styles. The core concepts discussed in lectures and print based formats can be reinforced by students using digital resources such as online modules, virtual patients, podcasts, and animations.

In addition to supporting independent student learning, OERs present many benefits. The creation of OERs provides an outlet for faculty to distribute their intellectual content in a format they can control without transferring any of their rights to publishers. Since educators and researchers often give their intellectual content to publishers who in turn sell it back to universities and students in the form of articles and textbooks, OERs can save students and the state of Florida money by using existing state resources to distribute content in a more affordable manner.

Unlike the traditional print publication process in which the incorporation of revisions and the development of new editions can be a lengthy process, the digital formats of OERs can be updated and revised quickly. OERs can be reviewed regularly to ensure that the information they contain remains both current and relevant.

OERs can also enhance collaboration among medical faculty with similar interests. For example, OERs can be developed by experts in several disciplines that reinforce concepts addressed in the curriculum. The Florida Colleges of Medicine Open Educational Resources Task Force plans to explore the feasibility of creating a network of faculty from all Florida medical schools to develop OERs that could be easily customized and used in similar courses offered across the state. This network would ultimately reduce the duplication of efforts required to design and develop educational materials used in medical courses and clerkships.

Using a digital repository such as The Orange Grove, these resources can be preserved so that other educators may use them in the future. The repository can also serve as a mechanism for organizing the collection of resources used in the FSUCOM curriculum. Each resource can be systematically cataloged in the repository to increase its discoverability and accessibility.

Furthermore, FSUCOM faculty members have indicated significant interest in using and developing OERs. The results of surveys, interviews, and workshops with faculty have demonstrated that overall, faculty are supportive of OER development at FSUCOM, and many have expressed ideas for new OERs. The FSUCOM Open Educational Resources Task Force recommends the formation of an additional committee to establish quality standards for OERs added to the FSUCOM collection in The Orange Grove and to pursue the recognition of OERs and other forms of digital scholarship in promotion and tenure policies. The Task Force believes that in order for this initiative to succeed, promotion and tenure committees must recognize an OER as a legitimate form of educational scholarship.

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Appendix A

FSUCOM Task Force Members

Chair:	**Barbara Shearer**, Director, Charlotte Edwards Maguire Medical Library
Project Manager:	**Roxann Williams**, Special Projects Librarian, Charlotte Edwards Maguire Medical Library
Members:	**Jonathan Appelbaum**, Education Director, Internal Medicine
	Lisa Granville, Associate Chair, Geriatrics and Year 1 Doctoring Course Director
	Susan Henderson, Associate Executive Director, Florida Distance Learning Consortium
	Mary Johnson, Associate Dean for Faculty Development & Medical Microbiology Course Director
	Debralee LaSeur, Educational Technology Specialist, Medical Informatics
	Kathy Lee, Education Director, Psychiatry
	Michele Manting, Education Director, OB/GYN
	Carol Painter, Assistant Professor, Medical Humanities and Social Sciences
	Shenifa Taite, Instructional Designer, Office of Medical Education

Florida Colleges of Medicine Task Force Members

Chair:	**Barbara Shearer**, Director, Charlotte Edwards Maguire Medical Library
Project Manager:	**Roxann Williams**, Special Projects Librarian, Charlotte Edwards Maguire Medical Library
Members:	**David Boilard**, Director, Medical Library, Herbert Wertheim College of Medicine, Florida International University
	Cecilia Botero, Associate Dean of the George A. Smathers Libraries and Director of the Health Science Center Libraries, University of Florida
	Jennifer Boxen, Senior Medical Librarian, Associate University Librarian, Florida Atlantic University Libraries
	Nadine Dexter, Director, Harriet F. Ginsburg Health Sciences Library, and Director of Medical Informatics, University of Central Florida College of Medicine
	Mary Moore, Executive Director, Louis Calder Memorial Library and Biomedical Communications, University of Miami Miller School of Medicine, Miami
	Kaye Robertson, Director at the Health Professions Division Library, Nova Southeastern University, Fort Lauderdale
	Beverly Shattuck, Associate Vice President of Libraries, USF Health Director, Shimberg Health Sciences Library, University of South Florida

Appendix B

Florida State University College of Medicine
Open Educational Resources Survey Results

1. **Were you aware that this type of resource exists to support student learning?**

Faculty by Position	Yes	No
Directors & Administrators	22 (66.7%)	11 (33.3%)
Full-Time Faculty	26 (60.5%)	17 (39.5%)
Clerkship Faculty	99 (43.6%)	128 (56.4%)
Mean	**48.5%**	**51.5%**

Total responses received: 303

2. **How likely are you to use OERs in your teaching?**

Faculty by Position	Very Likely	Possibly	Somewhat Likely	Not Likely	Not sure at this time
Directors & Administrators	23 (69.7%)	6 (18.2%)	3 (9.1%)	0 (0.0%)	1 (3.0%)
Full-Time Faculty	16 (37.2%)	15 (34.9%)	6 (14.0%)	4 (9.3%)	2 (4.7%)
Clerkship Faculty	87 (38.8%)	82 (36.6%)	33 (14.7%)	15 (6.7%)	7 (3.1%)
Mean	**42.0%**	**34.3%**	**14.0%**	**6.3%**	**3.3%**

Total responses received: 300

3. **Have you developed or are you currently developing products for educational purposes that could be used as OERs?**

Faculty by Position	Yes	No
Directors & Administrators	11 (33.3%)	22 (66.7%)
Full-Time Faculty	11 (25.6%)	32 (74.4%)
Clerkship Faculty	99 (43.6%)	128 (56.4%)
Mean	**40.3%**	**60.7%**

Total responses received: 300

4. **Do you have OER content that you are willing to share on the Florida digital repository (called Orange Grove)?**

Faculty by Position	Yes	No
Directors & Administrators	6 (18.2%)	27 (81.8%)
Full-Time Faculty	6 (14.0%)	37 (86.0%)
Clerkship Faculty	13 (5.8%)	211 (94.2%)
Mean	**8.3%**	**91.7%**

Total responses received: 300

5. **Are you interested in learning more about developing OERs and incorporating them into your course or clerkship learning environment?**

Faculty by Position	Yes	No
Directors & Administrators	30 (90.9%)	3 (9.1%)
Full-Time Faculty	33 (78.6%)	9 (21.4%)
Clerkship Faculty	166 (73.8%)	59 (26.2%)
Mean	**76.3%**	**23.7%**

Total responses received: 300

6. **How likely would you be to develop OERs if you were given institutional recognition/credit (compensation; credit for promotion and tenure; change in assignment of responsibility, etc.)?**

Faculty by Position	Very Likely	Possibly	Somewhat Likely	Not Likely	Not sure at this time
Directors & Administrators	20 (60.6%)	5 (15.2%)	4 (12.1%)	3 (9.1%)	1 (3.0%)
Full-Time Faculty	16 (38.1%)	15 (35.7%)	6 (14.3%)	2 (4.8%)	3 (7.1%)
Clerkship Faculty	54 (23.8%)	85 (37.4%)	34 (15.0%)	40 (17.6%)	14 (6.2%)
Mean	**29.8%**	**34.8%**	**14.6%**	**14.9%**	**6.0%**

Total responses received: 302

7. **How important do you consider this issue to be for FSUCOM to explore?**

Faculty by Position	Very High Importance	High	Average	Low	No Importance
Directors & Administrators	7 (21.2%)	16 (48.5%)	9 (27.3%)	1 (3.0%)	0 (0.0%)
Full-Time Faculty	4 (9.5%)	25 (59.5%)	13 (31.0%)	0 (0.0%)	0 (0.0%)
Clerkship Faculty	16 (7.1%)	115 (51.1%)	87 (38.7%)	7 (3.1%)	0 (0.0%)
Mean	**9.0%**	**52.0%**	**36.3%**	**2.7%**	**0.0%**

Total responses received: 300

9. **What is your role in our institution?**

Self-Identified Role	Number	Percent
Preceptor Faculty	68	20.9%
Clerkship Faculty	131	40.3%
Clerkship Director	10	3.1%
Course Director or Education Director	27	8.3%
All Other Teaching Faculty	50	15.4%
Department Head	6	1.8%
Other	33	10.2%
Total	325	100%

Note: Some respondents selected more than one role
Total responses received: 303

10. **Are you willing to be contacted for a follow-up study?**

Faculty by Position	Yes	No
Directors & Administrators	26 (81.3%)	6 (18.8%)
Full-Time Faculty	24 (60.0%)	16 (40.0%)
Clerkship Faculty	152 (67.9%)	72 (32.1%)
Mean	**68.2%**	**31.8%**

Total responses received: 296

Survey Response Rate

Faculty by Position	# of Surveys Sent	# Returned	Response Rate
Course Directors & Administrators	39	33	84.6%
Full-Time Faculty	69	43	62.3%
Clerkship Faculty	1627	227	13.8%
Total	1735	303	17.5%