



2013 Digital First Impact Grant Project Plan

Biomedical Sciences Graduate Program

iPad Enabled Curriculum for First Year Graduate Students



The College of Medicine will implement iPads as an integral learning tool in the Biomedical Sciences Graduate Program. Year one students will receive iPads and act as the catalyst for redesigning course materials and curriculum structure with a goal of enhancing the teaching and learning experiences by creating an anywhere, anytime mobile learning environment.

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Project Committee

BIOMEDICAL SCIENCES GRADUATE PROGRAM

Project Lead

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Team

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Executive Summary

Background

The Biomedical Sciences Graduate Program within The College of Medicine trains students to investigate human disease through a process of integrating information across several traditional biomedical research disciplines. Biomedical Sciences is an umbrella program that includes all (basic science and clinical) departments in the College of Medicine at OSU. Students are expected to learn a wide range of interdisciplinary research skills but specialize in two of the department's areas of research emphasis. The program consists of two years of coursework and preparation for candidacy exams, followed by completion of a dissertation leading to either a PhD or combined PhD/MD degree. Approximately 25 students are admitted each year.

Problems/Challenges

The Program has proven successful, but aims for ongoing improvement. Technology can play a crucial role in further improving student education by reducing the effort required by students to access the wide range of educational and research materials required by the curriculum.

Our first year curriculum has been revamped to streamline classroom work and introductions to laboratory techniques, and disperse students into research labs quickly to identify their primary mentors and dissertation research. We believe that this new curriculum will enable hard-working students to complete their PhD dissertation in four to five years without compromising quality. First year and second year classwork focuses on research problem-solving and includes courses on biostatistics, informatics, grant writing, and public speaking to enable our students to succeed in the current research climate. We have a very large inventory of research opportunities that includes over 270 laboratories available for research in a variety of disciplines at the OSU Wexner Medical Center and Nationwide Children's Hospital campuses.

Solutions

Navigating this vast learning environment of locations and specialized research information proves challenging to students. Mobile technology is ideally suited to enable students to do so more effectively. Three aspects of iPad computing seem most likely to improve student learning and experience:

- Flexible access to curricular materials: Through a combined use of learning management system and lecture capture solution, we will provide students with anytime, anywhere access to course materials and to recorded versions of class activities.
- Flexible access to research materials: iPads, in conjunction with widespread wireless access and library materials, will provide students with mobile access to research materials when and where they need them.
- Specialized apps to facilitate learning and research: The project will provide students guidance and training in selecting the most useful standard apps for learning and research management, as well as help identifying and making use of more specialized apps to enhance their specialized research.

Each of these uses of the iPads will require support and training of both students and faculty, as well as collaboration with relevant IT units to ensure that the facilities' infrastructures will support the use of iPads.

The Biomedical Sciences Graduate Program within The College of Medicine applied for a grant with Digital First to help implement new technology for the classroom. The College wants to use iPad and iOS technology along with other third party software to enhance the classroom educational experience. Coupled with obtaining supplemental material outside of the classroom, The College of Medicine believes that new technologies will improve the rate at which people collaborate on projects, learn class objectives, and assist those that need refresher material for certain topics. Finally this will serve as a recruitment tool to get more students interested in the biomedical sciences within The College of Medicine. This initiative is set to take one year but no more than two years to implement.

Project Goal(s)

The goal of this grant is to improve student learning of the Biomedical curriculum by enhancing both the classroom experience and out-of-class experience. During class time, iPads will be used to facilitate activities that augment the lecture, including: videos and use of databases. Outside of class, students will be able to use iPads to access lectures and other course materials, [etc.]. Throughout the program technology-enhanced activities will be designed to increase student and faculty collaboration.

It is further believed that technology-enhanced education will improve students' ability to use technology in their work, thus be better prepared to engage with technology-enhanced systems they will encounter in their careers.

Project Objectives Contributing to Project Goals

Objective 1: Acquire and Provide iPads to All Students in 2013-14 Cohort

- Total # of iPads, iPad Model Type
- Student Acceptable Use Policy
- In accord with all applicable university and college policies

Objective 2: Improve Access to Curricular and Classroom Materials

- Provide access to curricular materials in either iTunes U or iBook formats
- Integrate Mediasite (lecture capture) into iTunes U
- Configure iPads to provide simplest access to lecture capture and other classroom materials

Objective 3: Provide Guidance and Training for Selection and Use of Apps

- Choose and configure a standard toolkit of apps for use across courses
- Choose and configure specialized sets of apps for specialized courses/topics
- Provide training in the most effective use of those standard apps
- Provide training in ways to identify, choose, and configure specialized apps

Objective 4: Improve Access to Research Sources and Materials

- Choose and configure a standard toolkit of apps for use across courses
- Choose and configure specialized sets of apps for specialized courses/topics
- Provide training in the most effective use of those standard apps
- Provide training in ways to identify, choose, and configure specialized apps

Project and Process Goals and Objectives

Objective 5: Establish Sustainable Best Practices and Process

This project aims to establish best practices and a sustainable process for continuing to improve the toolkits, identify and integrate new specialized apps, and otherwise build the program according to a continuous improvement model.

- Establish a committee to guide the ongoing configuration and use of iPads
- Design a sustainable process for documenting investigations and decisions regarding specific categories of apps
- Design a standard program of training for both students and instructors

Objective 6: Maximize Benefits for Recruitment

Recruitment is expected also to benefit from the iPad-enhanced curriculum, both directly and indirectly. Students should prefer to attend an iPad-using program. The improved learning and introduction to technology-enhanced medicine should also make OSU's program more attractive to pragmatic students.

- Produce materials (handouts, A/V, etc.) to inform prospective students about the iPad project and its benefits for them
- Schedule demonstrations for prospective students demonstrating the use of iPads

Project Objectives contributing to Project Goals

Develop an initial curriculum development plan for Fall Semester 2013 and Spring Semester 2014.

Have in place a curriculum that fully integrates iPads into Year One curriculum for the 2014-2015 academic year.

Configure iPads to enable all curricular activities and assessments

In-Scope

- Implementing Student iPads for all Year One Biomedical Students
- Designing Year One curriculum into at least three semester long iTunes U Courses
- Examining the possibility of developing iBooks for the IBGP 8050 course in the summer of 2014
- Providing access to Mediasite-recorded lectures via iTunes U
- Developing a standard curricular toolkit of 10-20 apps, with accompanying training, documentation, and maintenance planning
- Developing a standard research toolkit of 5-10 apps, with accompanying training, documentation, and maintenance planning
- Ongoing support and training for first-year cohort during their second year, but not Year Two curricular revisions or development.
- Ongoing support and training of Year One Biomedical Faculty. Providing face-to-face and recorded training on integrating iPads in their courses.

Out-of-Scope

- Any design or development of Year Two or beyond curriculum
- Partnerships with other courses, colleges, and/or institutions beyond OSU
- Grant applications, etc.

Strategic Projects Alignment

- Digital First - Digital First is redesigning the campus experience at Ohio State by optimizing wireless and classroom technology, inspiring instructors to offer engaging digital learning content to students, and enhancing the student experience from enrollment to graduation and beyond.
- Interdisciplinary Initiatives (across colleges)
- Service Learning
- Global perspective
- In the College of Medicine's Strategic Plan, one of the Strategic Focus Areas is to, "develop pioneering educational approaches to create a favorable brand identity and become a destination of choice for prospective students." The Digital First grant and the implementation of the iPads in the classroom will assist The College of Medicine in recruiting higher quality students. In addition, Dean Lockwood has indicated that there is a need to enhance the perceived quality of teaching. The College of Medicine's Strategic Plan states, "Full use should be made of 'teach the teachers' resources as well as development of the new curriculum's faculty coaches. The Digital First grant fits nicely with these goals.
- OSU Libraries – Increased use of resources.
- College of Medicine Clinical iPad Student Project

Success Criteria

This overall goal will be measured in global improvements in course outcomes: additional student and faculty collaboration, higher grades, and other metrics that will help promote the college in illustrating a superior education, such as:

- Agreement that iPads enhanced interactions in class
- Agreement that iPads facilitated collaboration outside class with classmates
- Agreement that iPads facilitated collaboration outside class with the instructors
- Student satisfaction with iPads
- Agreement that iPads enhanced student learning of course materials
- Better impression of the College of Medicine due to this course experience
- Agreement that "I would recommend this program to others"

Objective 1: Acquire and Provide iPads to All Students in 2013-2014 Cohort

- Each student will have a working device throughout the grant project
- No university policies will be harmed in the making of this grant

Objective 2: Improve Access to Curricular and Classroom Materials

- All curricular materials will be available in usable form in either iTunes U or iBook formats
- Enhance the student experience, so that all curriculum is delivered efficiently and effectively
- Mediasite (lecture capture) integration into iTunes U, students will have access to recordings of all lectures.
- Instructors will be able to provide course materials with less effort than other forms
- Recordings from the first year class (I.E. IBGP 8050) will be applicable and implemented in the following year in an iBook or iTunes U course.

Objective 3: Provide Guidance and Training for Selection and Use of Apps

- Faculty and students attend training sessions for integrating apps into the classroom experience
- Students and faculty report confidence in their ability to use iPads for course activities
- Students will be sufficiently trained to make use of iPads
- Instructors will be sufficiently trained to make use of iPads
- Standard toolkit and specialized apps will perform to satisfaction
- Students and instructors will be properly trained in ways to identify, choose, and configure specialized apps
- Student evaluations review the effectiveness of integration of technology into the classroom

Objective 4 : Improve Access to Research Sources and Materials

- Choose and configure a standard toolkit of apps for use across courses
- Students and faculty will report few course activities that could not be completed on iPads using apps and training provided
- Students and faculty will report less time spent per finding each research article
- Students and faculty will report having access to a wider range of quality research materials

Objective 5: Establish Sustainable Best Practices and Process

- Establish a committee that meets quarterly to guide the ongoing configuration and use of iPads
- Design a sustainable process for documenting investigations and decisions regarding specific categories of apps
- Design a standard program of training for both students and instructors

Objective 6: Maximize Benefits for Recruitment

- Produce materials (handouts, A/V, etc.) to inform prospective students about the iPad project and its benefits for them
- Schedule demonstrations for prospective students demonstrating the use of iPads
- Prospective students report that the iPad project increases their likelihood to choose OSU

Data-Gathering Plan

The success of this grant project will be measured through a combination of the following methods:

- Demonstration of student success (in course grades and performance on standardized tests and relative to students in other areas)
- Student and instructor surveys
- Student and instructor focus groups

Due to the nature of the program, it will not be possible to evaluate the success of the project with a single year's data. Thus, the project assessment will be conducted over the course of two years.

Data-gathering #1: Evaluation of program after first year

- Comparison of average grades for classes to those from prior years
- Pre and post survey regarding the student experience with the iPad
- Conduct focus groups from someone outside of the college to get honest and forthright feedback about the implementation of the iPads in the classroom

Data-gathering #2: Evaluation of program after second year

Integration of iPad technology into curriculum should be more complete in the second year: videos obtained in year 1 are available for first year students in year 2; more classes/lectures utilize apps; lessons learned from year 1 will be included in materials for courses in year 2

- Compare student evaluations of students to those from year 1
- Compare the average grades of students over multiple years
- Pre and post survey regarding the student experience with the iPad

Risk Assessment

Project Assumptions

- Dean of the College of Medicine, Charlie Lockwood, is supportive of the project and will provide support to purchase any additional iPads needed by teaching faculty members.
- Faculty members will stretch themselves by trying to incorporate the iPad into their teaching.
- We have a creative and collaborative team that will make the project be successful.
- Wireless and other infrastructure is sufficient to provide access for iPads

Projects Risks

- McAfee Mobile may provide a risk in that this application is not always up to date with iOS and may cause issues with other applications. Also, OSUWMC-IT has full control of the device and the content on that device. Please see screenshot below of agreement
- As of 7/5/2013, the OCIO is in the process of evaluating vendors for an Electronic Lab Notebook (ELN). If a vendor is selected and OCIO pays for a license agreement; a risk presents itself of how to deploy that ELN to devices that are controlled through OSUWMC-IT
- This project may take more than one year to implement. Since this project covers such a wide scope with people at various iOS skill levels, it may be likely that the implementation may bleed into a second year.
- That some materials or guidelines prohibit full integration of iPad technology for FERPA or other regulations.

Risk Description	How Likely 1=low 2=med 3=high	Impact 1=low 2=med 3=high	Score likely x impact	Mitigation
New Technology	2	3	6	Provide training and support to ease the transition and implementation of new technology.
Mcafee Mobile Management	3	1	3	
Electronic Lab Notebooks	2	2	4	
One Year Implementation	2	2	4	Work closely within a timeline to ensure deliverables are being met.

Obstacles / Constraints

- FERPA, HIPAA
- Med Center/Medical School IT Restrictions
- Building Capacity
- Scheduling (start-date)

Schedule Considerations / Other Projects / Related Projects

The Graduate Admissions season ramps up and the Biomedical Sciences Graduate Program Office has a heavy workload December-March each year.

Ohio State Online

- Two other Digital First Impact Grant projects will overlap in whole or in part
- Digital First Impact Grant application/selection processes in April-May
- Innovate Conference March 26, 2014

Project Milestones and Major Deliverables

Milestone/Deliverable	Target	Responsible
Complete Project Plan	8/8/2013	JP/AL/TY
Purchase iPads & Initial Apps	7/16/2013	AL/CT/TY
Initial Faculty & Staff Professional Development - Intro to iPads & Productivity	7/24/2013	SL
Launch iPad Orientation iTunes U Course for Students	8/10/2013	AL/CT/TY
Faculty & Staff Professional Development - Teaching & Learning with iPads PART 1	8/14/2013	CT
Faculty & Staff Professional Development - Teaching & Learning with iPads PART 2	8/15/2013	DH
Finalize Student iPad Implementation Plan	8/20/2013	AL/CT/TY
First Day of Fall Semester 2013	8/21/2013	N/A
Student Training & Orientation	8/2013 & 9/2013	SC/AL/SL/CT/TY
All team members (listed on application) have completed CITI and COI training	10/1/2013	All Team Members
Complete all surveys for assessment	10/1/2013	AL/CT/TY
IRB Application submitted	10/1/2013	AL/CT/TY
First Day of Spring Semester 2014	1/6/14	N/A
Student Surveys (2 per Semester)	TBD	AL/JP/CT/TY
Student Focus Group	TBD	AL/JP/CT/TY
New Year 1 Cohort Arrives	6/1/14	N/A
Student Training & Orientation	6/2014	SC/AL/SL/CT/TY
First Day of Summer Semester 2014	6/16/14	N/A
Student Surveys (2 per Semester)	TBD	AL/JP/CT/TY
Student Focus Group	TBD	AL/JP/CT/TY
Mid-Project Report	8/1/14	AL/JP/ TY
First Day of Fall Semester 2014	8/21/14	N/A

Student Surveys (2 per Semester)	TBD	AL/JP/CT/TY
Student Focus Group	TBD	AL/JP/CT/TY
Fist Day of Spring Semester 2015	1/7/15	N/A
Phase Out Agreement	2/1/15	CT/AL/JP/TY
Final Report Due	7/31/15	AL/JP/CT/TY
Journal Article Submission	7/31/15	AL/JP/CT/TY

In addition, the following interactions are anticipated:

Blog/Feature Story (Project Launch)	8/2013
ELT/iPads in the Classroom	TBD
Innovate 2014	3/2014
Blog/Feature Story (End of Spring Semester)	5/2014
Blog/Feature Story (End of Summer Semester)	8/2014
ELT/iPads in the Classroom	TBD
Blog/Feature Story (End of Fall Semester)	1/2015
Innovate 2015	3/2015
Blog/Feature Story (Wrap-Up)	8/2015