

CIT Annual Report 2012 – 2013

July 1, 2012 – June 30, 2013

CIT supports the teaching and learning needs of individual faculty, academic departments, programs and schools. To advance Duke's mission and strategic goals, CIT collaborates with librarians, technologists, administrators and many other staff across all of Duke's schools and units on short-term projects and long-range initiatives.

Updates on key priorities

Supporting teaching effectiveness and innovation

- Along with colleagues from OIT, the library and others, developed, supported and evaluated 11 MOOC courses in Coursera, more than almost any other institution offered last year.
- Organized a year-long faculty learning community about Team-Based Learning, for 15 faculty from varied disciplines
- Responded to over 1,000 inquiries and questions from faculty
- Organized a day of workshops on flipping your classroom with Larry Michaelsen, inventor of Team-Based Learning, attended by about 80 faculty and staff.

Exploring new technologies

- Learned about and provided detailed support for the use of Coursera MOOC platform.
- Explored and enabled new features in Sakai to support faculty needs (Piazza Q&A tool, Kaltura video management tool)
- Collaborated with OIT to investigate options for Digital Asset Management at Duke

Building campus infrastructure

- Completed the smooth transition from Blackboard to Sakai learning management system
- Supported the continued use of WordPress for web publishing and blogs in teaching
- Helped faculty learn about and use new videoconferencing tools in WebEx
- Helped expand the use of OIT's Multimedia Project Studio for media development related to MOOCs and campus courses by training and supporting faculty using the space.

Sharing and building knowledge about instructional technology

- Gave over 15 presentations at regional and national conferences or events as recognized experts
- Hosted 65 teaching or technology events or workshops on Sakai, Coursera, Team-Based Learning, and other topics, which were attended by over 500 unique attendees
- Published an e-newsletter filled with instructional technology highlights to 1,500+ subscribers inside and outside of Duke
- Published 90+ blog posts highlighting the work of Duke faculty as well as general instructional technology happenings outside of Duke.

Supporting Teaching Effectiveness and Innovation

Leadership in Massive Open Online Courses (MOOCs)

Duke's First MOOCs

In July 2012, Duke partnered with Coursera, a leading MOOC platform provider, to develop Duke Coursera MOOCs. This past year, Duke developed 11 Coursera MOOCs from 13 university departments. Most faculty plan to teach their MOOCs again; and two have already completed second sessions of their courses.

MOOC Development

While course development has varied across courses, Duke has begun to form a per-course team model, including the course instructor(s), an academic technology consultant, and an online course associate (a kind of teaching assistant). A core team provides support for all courses on media production, navigating copyright permissions, and various policy and procedural issues.

Impact of Duke's MOOCs

- **Reaching Students Globally**

Duke's Coursera courses from the 2012-13 academic year attracted over 736,000 registrations from over 200 countries and territories, with approximately 2/3 from outside the U.S. and 1/3 from developing countries. Participants' ages ranged from under 13 years old to over 65, and the majority of participants (approximately 68%) were over 25 years old. Roughly 75% of participants had a bachelor's degree or higher.

- **Scope of Student Activity and Achievement**

Across Duke's 13 course sessions, there were over 9.7 million unique course video downloads/streams and nearly 300,000 posts and comments in the courses' discussion forums. Over 25,000 Statements of Accomplishment were awarded to students who successfully completed the requirements for their course.

- **Reputation of Duke Coursera MOOCs**

From the natural sciences to the humanities, Duke Coursera MOOCs have begun to create a name for themselves as exemplary courses in the MOOC space. In each of Duke's 13 Coursera course sessions, between 83% and 95% of the student survey respondents rated their overall experience in their courses as a 5 or higher (1 = poor; 7 = excellent).

- **Reputation of Duke Faculty**

In each of the 13 course sessions, 75% to 98% of student survey respondents agreed that the Duke faculty enhanced their understanding in the course, and 65% to 97% of respondents in each survey agreed that they would take another course from their Duke instructor(s).

Duke's 2012 – 13 Coursera Courses

COURSE TITLE	INSTRUCTOR(S), DEPARTMENT
Bioelectricity	Roger Coke Barr <i>(Biomed. Eng.)</i>
Genetics & Evolution	Mohamed Noor <i>(Biology)</i>
Think Again	Walter Sinnott-Armstrong <i>(Philosophy)</i> , Ram Neta <i>(UNC)</i>
Astronomy	Ronen Plesser <i>(Physics)</i>
Genetics & Evolution (2nd)	Mohamed Noor <i>(Biology)</i>
Image & Video Processing	Guillermo Sapiro <i>(Electrical and Materials Engineering)</i>
Bioelectricity (2nd)	Roger Coke Barr <i>(Biomed. Eng.)</i>
Human Physiology	Emma Jakoi and Jennifer Carbrey <i>(Cell Biology)</i>
English Composition I	Denise Comer <i>(Thompson Writing Program)</i>
Irrational Behavior	Dan Ariely <i>(Economics; Business)</i>
Medical Neuroscience	Leonard White <i>(Physical Therapy; Neuroscience)</i>
Healthcare Innovation & Entrepreneurship	Marilyn Lombardi, Bob Barnes <i>(Nursing; Biomed. Engineering)</i>
Sports & Society	Orin Starn <i>(Cultural Anthropology)</i>

- **Assessment of Duke MOOCs**

Duke has completed detailed course-level MOOC reports on Bioelectricity and Introduction to Astronomy, and has generated many informal updates and short reports on the course development process, teaching strategies, and student responses to the courses (see <http://cit.duke.edu/blog/category/strategies/mooc/>).

Duke as an Early-Mover in MOOC space

- **Awarded Gates MOOC Grant**

In November 2012, Duke was one of nine academic institutions to receive a \$50,000 grant from the Bill & Melinda Gates Foundation to develop and evaluate MOOCs on “their potential to make content and learning more accessible and affordable at web scale.” *English Composition I: Achieving Expertise*, a 12-week course, which ran from 3/18/13 to 6/10/13, had a peak enrollment of 70,000 students.

- **Experimenting on the Coursera Platform**

From the integration of Google+ Hangouts to utilizing volunteer community teaching assistants in course forums, Duke faculty and staff provided feedback as early testers of new tools on the Coursera platform.

- **Piloting Coursera’s Signature Track**

Seven Duke MOOCs offered Coursera’s Signature Track, a revenue-generating feature where students can choose to pay a fee for keystroke and webcam verification of their work and then earn a verified, Duke-branded certificate.

- **ACE Credit Equivalency Recommendation**

In February 2013, two of Duke’s MOOCs, *Genetics & Evolution* and *Bioelectricity*, were among an initial group of five Coursera courses recommended for college credit equivalency by the American Council on Education (ACE).

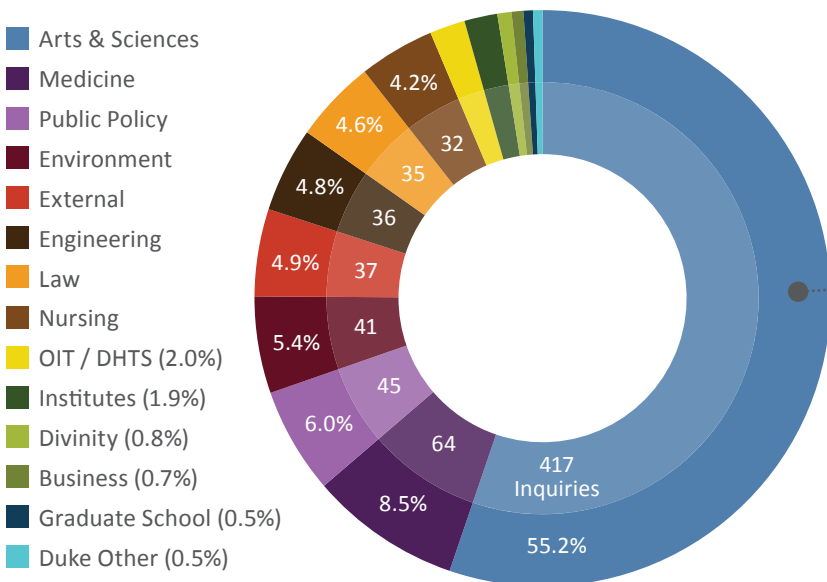
- **New Duke Coursera MOOCs in the 2013 – 14 Academic Year**

Ten new proposals, from faculty in ten different university departments, were selected for further planning and then development into MOOCs for the coming academic year.

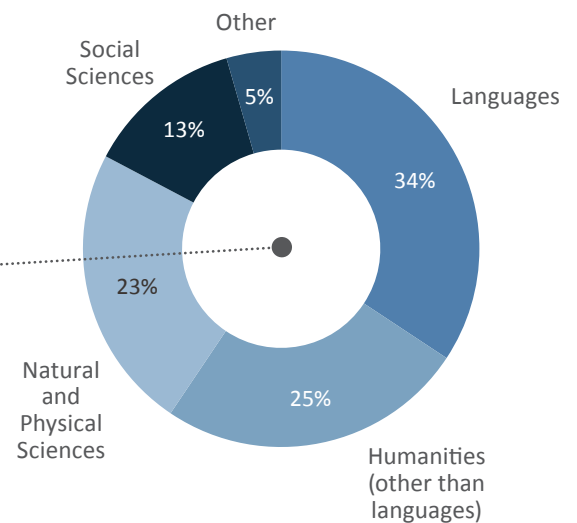
CIT Projects, Consults, and Inquiries

Over the last year, CIT staff worked on over 1,000 inquiries, requests, consultations and projects with Duke faculty and instructors, not including support described in section *Building Duke’s eLearning Infrastructure*.

Inquiries and Consultations by School



Arts & Sciences Consulting by Discipline Area



Instructional Technology Fellows Program

As CIT's signature program for supporting teaching effectiveness and faculty innovation, the Fellows program provides sustained support over a semester or a year for groups of faculty as they implement changes in curriculum or pedagogy. CIT offers instructional design, technology and assessment consulting to help faculty implement these changes into their teaching. Recently completed Fellowships are outlined below:

Team-Based Learning Fellowship (2012 – 2013)

Fifteen faculty and two graduate students from 13 departments participated in this year-long Fellowship to learn about and implement the Team-Based Learning (TBL) teaching strategy into their Duke courses. During the Fellowship, faculty worked intensively on course design, effective group formation, peer evaluation strategies and assessment design for team-based learning. Twenty-four courses, impacting 1,254 students, were redesigned using at least some aspects of TBL. The majority of the faculty reported that TBL had a very positive impact on their class, and commented that students learned more with TBL.



Participants:

Nicholas Carnes, *Assistant Professor, Sanford School of Public Policy*

Mine Cetinkaya-Rundel, *Assistant Professor of the Practice, Statistical Science*

Dennis Clements, *Professor of Pediatrics, Community and Family Medicine, and Global Health*

Daniel Gauthier, *Professor, Physics*

Michelle Hartman, *Assistant Professor, Nursing*

Alison Hill, *Lecturer, Biology*

Steve Kelly, *Visiting Professor of the Practice of Public Policy and Canadian Studies*

Katie Kretovich, *Graduate Student, Cell and Molecular Biology*

Cory Krupp, *Associate Professor of the Practice, Sanford School of Public Policy*

Laura Lieber, *Associate Professor, Religion*

Richard Lucic, *Associate Professor of the Practice and Associate Chair, Computer Science, and Curriculum Director, ISIS*

Dick MacPhail, *Associate Professor, Chemistry*

Yuvon Mobley, *Graduate Student, Molecular Genetics and Microbiology*

Alyssa Perz-Edwards, *Assistant Dean of Trinity College and Lecturer, Biology*

Chantal Reid, *Assistant Professor of the Practice, Biology and Environmental Sciences & Policy*

Roxanne Springer, *Professor, Physics*

Rebecca Vidra, *Lecturer, Environmental Sciences & Policy*

Duke Environmental Leadership Program (NSOE) Fellowship (2012)

Seven years ago, the Nicholas School of the Environment initiated the Duke Environmental Leadership (DEL) Program, an online master's degree aimed at mid-career professionals. This Fellows program, which ran from January through December 2012, explored how DEL can improve and build on best practices for distance teaching.

During the Fellowship, nine faculty developed or redesigned specific projects or assignments for their online courses. In addition, the DEL Fellows group revised the faculty handbook for DEL and developed rubrics, guides and tip sheets that can be used by other DEL faculty when designing or revising their courses. For more information and a list of participants, see <http://tinyurl.com/2012-del-fellows>.

Building Duke's eLearning Infrastructure

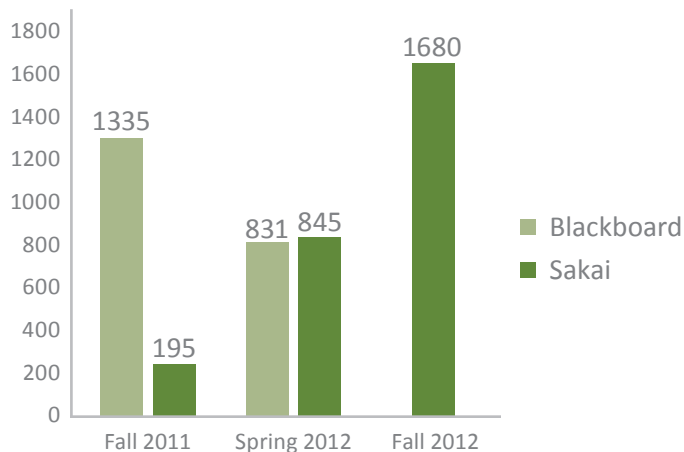
The CIT collaborates with the Office of Information Technology and other Duke units to support and build Duke's eLearning infrastructure. No longer just one learning management system, Duke's eLearning ecosystem involves many tools and options to meet the evolving needs of Duke faculty and students.

Sakai

Duke began the transition from Blackboard to Sakai in 2011. Fall 2012 marked the end of the transition, with over 1,600 courses running on Sakai.

The Fall 2012 semester ended with the successful transition from Blackboard to Sakai. Over 1,600 active course sites were created in Sakai, comparable to the 1,335 active course sites created in Blackboard during the Fall 2011 semester (see chart, right).

Blackboard to Sakai Transition (2011 – 2012)



In Spring 2013, Sakai usage grew to over 2,115 published course sites and 15,369 total users. CIT staff provided services, both directly and indirectly, to over 1,764 instructors.

Sakai's open source platform provides Duke the opportunity to choose how and when Sakai gets upgraded. To stay current with the Sakai community, Duke upgraded Sakai to version 2.9 in May 2013. The upgrade provided over 500 bug fixes and improvements, including new tools such as "Lessons" – which will help faculty organize and structure course content in a more sophisticated way.

WordPress

Duke faculty looking for more powerful blogging or web publishing tools continue to turn to WordPress (<http://sites.duke.edu>), Duke's flexible web publishing platform, to enhance their courses. Between Fall 2012 – Spring 2013, nearly 188 new sites were created for course-related use. WordPress use ranked highest in Writing, Spanish, French, English and Biology the past year.

Concourse and WebEx

Duke's collaboration with Cisco provided new additions to Duke's eLearning infrastructure. The new services include Concourse, an enterprise collaboration platform that brings together video, voice, instant messaging, presence and web conferencing into a single, integrated user experience; WebEx Meeting Lite, a free and convenient way to initiate "one-click" audio/video conferencing; and WebEx Meeting, which allows users to connect as many as 1,000 participants via telephone, computer audio and web videoconferencing.

Multimedia Project Studio

CIT staff continued to collaborate with the Multimedia Project Studio (OIT's specialty computer lab focused on multimedia, video and web production) to enhance the technologies and services the MPS provides. Several technologies were reconfigured or otherwise incorporated to better support the production of video and audio for Duke MOOCs.

Exploring New Technologies

Explorations in Sakai

CIT continued to explore adding new features to Sakai.

- **Piazza:** over 50 Duke courses used the social Q&A tool to manage discussions, course and homework questions.
- **Kaltura:** 268 courses used the Kaltura Media Gallery tool to upload and share video, audio and images. CIT staff also supported a video reserves pilot project for several courses.

Coursera

CIT staff supported the design, development and production of 11 MOOCs as part of Duke's partnership with Coursera. Working with the Coursera platform provided CIT staff with insight into new and different approaches required to deliver quality online courses at a massive scale.

Digital Asset Management exploration

CIT staff participated in a collaborative exploration of Digital Asset Management systems that can help share, store, and find digital materials for courses such as large video files, images, documents, and PPTs.

Sharing and Building Knowledge

Through presentations, publications, and professional service, CIT stays actively engaged across Duke and contributes to the broader higher education community. Our staff bring their knowledge of best practices, trends and innovative ideas to their daily interactions with the Duke community.

Events and workshops

Over the past year, over 500 Duke faculty attended 65 CIT-sponsored events and workshops focused on Sakai, Coursera, Team-Based Learning and other topics.

Highlights of 2012 – 13:

Workshops by Larry Michaelsen

In November 2012, CIT sponsored a campus visit by Dr. Larry Michaelsen, Professor at the University of Central Missouri, to speak about Team-Based Learning (TBL). Dr. Michaelsen invented Team-Based learning, a comprehensive group-based instructional strategy now being used in hundreds of disciplines and by thousands of faculty in at least 23 different countries. This strategy is also the basis for TeamLEAD, Duke's successful curriculum at Duke-NUS. At Duke, Michaelsen led two successful workshops, "Flipping Your Classroom with Well-Designed Group Work" (47 attendees) and "Turning Good Group Assignments into Great Ones" (40 attendees), as well as meeting separately with the faculty participants in the CIT's TBL Fellowship.



Instructional Technology Showcase

CIT's 13th annual Showcase on April 26, 2013 drew over 275 attendees to the Washington Duke Inn for sessions focusing on Duke and MOOCs, Curriculum and Course Design, Tools for Learning and Games and Simulations.



Sample Presentations and Invited Talks

CIT staff are invited to share their expertise with worldwide audiences at varied conferences and meetings each year.

Certification and Online Courses. Lynne O'Brien and Charlene Talbot, American Council on Education, at the Technology and Postsecondary Education Conference, Princeton University, May 22, 2013.

Designing effective courses. Amy Kenyon, Cassandra V. Horii (California Institute of Technology), Carin Nuernberg (Berklee College of Music), Steven Williams (University of California, San Francisco), Coursera Partners Conference, Philadelphia, PA, April 6, 2013

Nurturing TBL Across the Curriculum. Andrea Novicki, 13th Annual Conference on Team-Based Learning, San Diego, CA, March 1, 2013.

Developing a Recommended Course Design Process for Faculty Teaching MOOCs. Seth Anderson and Haiyan Zhou, ELI Annual Meeting, Denver, CO, February 5, 2013

How Can the Science of Science Education Inform Communication about Science? Andrea Novicki and Sandra Porter (Digital World Biology), ScienceOnline2013 Conference, Raleigh, NC, February 1, 2013.

Massive Open Online Courses as Drivers for Change. Lynne O'Brien, CNI Fall 2012 Meeting, Washington, D.C., December 11, 2012.

Duke's eLearning Roadmap and the Sakai Transition. Shawn Miller and Edward Gomes (Duke Arts & Sciences IT), Educause Annual Conference, Denver, CO, November 8, 2012

Areas of focus 2013–14

- Supporting the development of excellent Massive Open Online Courses and other exploratory online and distance learning pedagogical projects.
- Supporting faculty redesigning their campus courses to include more focus on student learning, particularly “flipping the classroom” efforts.
- Encouraging faculty to take pedagogical advantage of students’ growing access to internet-connected mobile devices in the classroom.
- Continuing to increase campus infrastructure and support for video produced and used for teaching and student learning.

CIT staff, 2012–13

Our staff have wide-ranging expertise across different areas of pedagogy and instructional technology, and have varied disciplinary backgrounds. See <http://cit.duke.edu/staff/>.

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