

GEORGETOWN UNIVERSITY

INITIATIVE ON
TECHNOLOGY-ENHANCED
LEARNING

Final Report
2013–2016



THE CENTER FOR NEW DESIGNS
IN LEARNING & SCHOLARSHIP



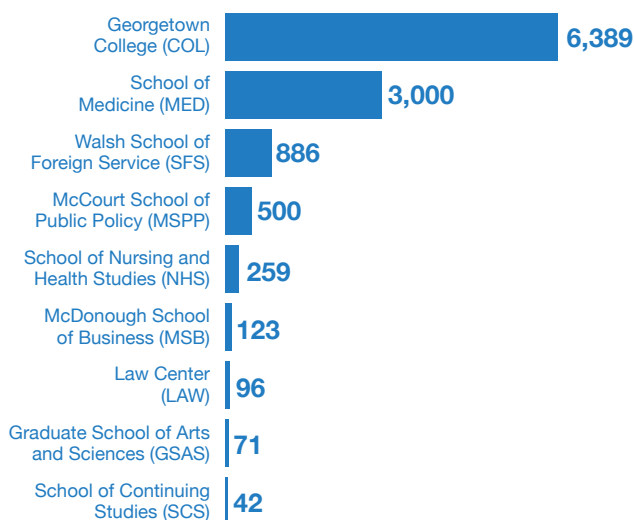
ABOUT ITEL

Since the spring of 2013, the Initiative on Technology-Enhanced Learning (ITEL)—an \$8 million investment in faculty grants, digital infrastructure improvements, and a partnership with edX—has provided funding and support to Georgetown University faculty in order to bring technology-focused teaching and learning ideas to life. This initiative, one component of the capital campaign ***For Generations to Come***, serves as an incubator for boundary-pushing experiments in teaching and learning, facilitating the widespread adoption of promising tools and approaches both on-campus and globally online.

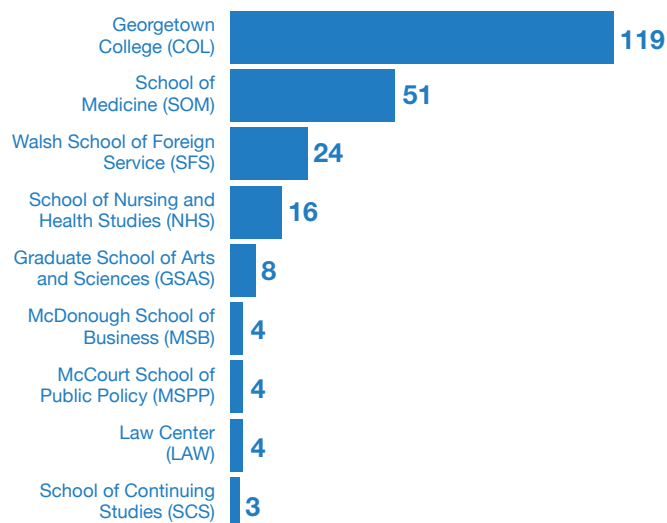
162 TOTAL PROJECTS

11,360+ GU students • 226,670+ MOOC enrollees

Students by Georgetown School



Faculty by Georgetown School



For project videos, additional stories, and assessment data, visit ITEL.GEORGETOWN.EDU.

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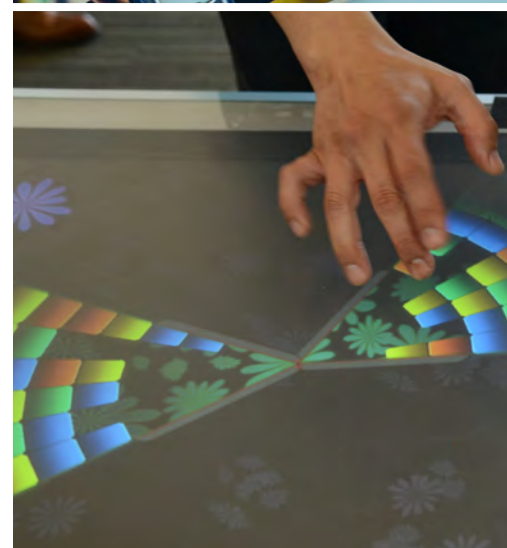
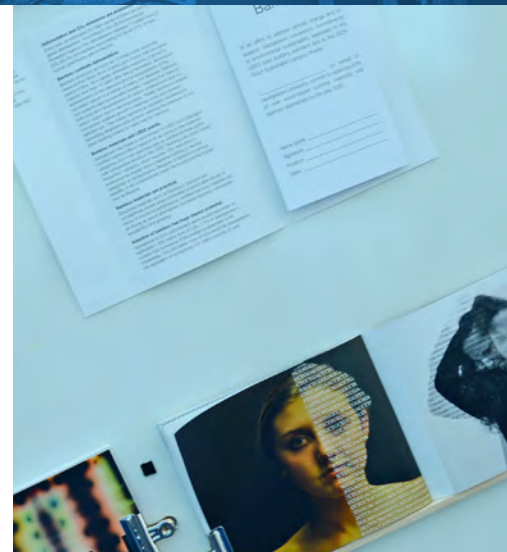
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FROM THE EXECUTIVE DIRECTOR

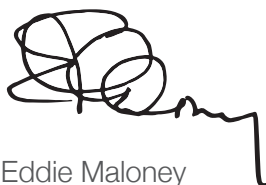
I am very pleased to present this final report on the Initiative on Technology-Enhanced Learning (ITEL). Comprising five rounds of grant-funded projects over three years, the Initiative's activities, outcomes, and impact on our students and faculty, as well as on world-wide online learners, are wide-reaching and impressive.

This moment represents an inflection point for teaching and learning with technology at Georgetown, marking the end of a large investment in grant-funded projects and a turn toward a period of sustainability and partnership. I'd like to highlight a few of the key impacts of the Initiative that you can read more about in this report:

- ITEL funded **hundreds of course-based faculty-led experiments** all with the purpose of improving the learning experience of our students. On pages 12-19 we highlight findings from projects focused on games and simulations, flipped/hybrid and online learning, social and collaborative learning, and tablet and mobile learning.
- ITEL has had an impact on faculty practice with technology tools for learning. In fact, **84% of ITEL faculty report they are still using the technology or practice**, and 35% say their practice or technology has spread to others (see pages 20-21 for more Faculty Impact).
- ITEL launched GeorgetownX, which has delivered **29 course offerings of 15 unique MOOCs** and continues to grow. This laid the foundation for a strong online course design and development team that is now available to the entire university through CNDLS (see pages 22-27 for more GeorgetownX Impact).
- ITEL promoted rigorous project assessment and the scholarship of teaching and learning, resulting in **dozens of scholarly publications and hundreds of presentations** at conferences (see pages 27-31 for more Assessment and Scholarly Impact).

This Initiative would not have been possible without a tremendous amount of support from across the university. I am grateful to Provost Groves and the deans for their leadership, to University Information Services, Lauinger and Dahlgren Libraries for their partnership, and to the Georgetown faculty who spent hundreds of hours imagining, implementing, and iterating on innovative teaching and learning practices to benefit our students. I am extremely proud of, and thankful for, the CNDLS staff who assisted in every way—from vision to details—in making this Initiative a success.

The findings and lessons generated by this Initiative can enable us to strategically move forward in supporting innovative technology-enhanced learning efforts at Georgetown University, now and into the future. I look forward to continuing to collaborate with our friends and partners across the university in carrying on this important work.



Eddie Maloney
Executive Director, CNDLS

SUCCESSES, CHALLENGES, AND RECOMMENDATIONS

The Initiative on Technology-Enhanced Learning (ITEL) has, by many measures, been an outstanding success. These successes, as well as the remaining challenges, are now informing designs for sustainability of technology-enhanced learning practices at Georgetown as well as for continued experimentation and generation of new knowledge. **Going forward we will work to sustain technology-enhanced learning and innovation through promoting and supporting best practices across our campuses; to continue to experiment and innovate on a smaller scale; and to partner both internally and externally to the university in order to cost-effectively address the needs of learners at home and worldwide.**

Key Successes of ITEL

- **Identification** of promising areas (games and simulations; flipped, hybrid, and online learning; social and collaborative learning; and tablet and mobile learning) where technology can enhance student educational experiences and development of signature projects which are helping to guide decisions and practices in these areas.
- **Investment** in the technological and pedagogical skills of our faculty, which has had a positive impact on learning for thousands of students and has in many cases resulted in the sharing of this work through research, presentations, and publications.
- **Establishment** of Georgetown as an international leader in open online course design and the development of a robust online programming support structure that extends Georgetown's reach, revenue, capacity, and global impact.
- **Campus-wide adoption** of successfully-piloted instructional technologies through cross-institutional collaborations with Classroom Educational Technology Services, University Information Services, and the Georgetown Library.

Remaining Challenges

- **Constraints of rapid funding cycles** create difficulty in sustaining existing projects at the same depth or in new contexts and courses.
- **Little cross-fertilization of ideas** across projects inhibits transformative change at the institutional level.
- **Promotion and tenure pressures** compete with spending time learning new technologies and with taking risks in teaching.
- **Significant development costs** of massive open online learning outweigh revenue from verified certificates.

Recommendations for Next Steps:

1

Reward, support, and recognize teaching innovation

Feedback from ITEL faculty indicates that official recognition, departmental support, and a positive impact on the promotion and tenure process would be helpful in getting more faculty across campus engaged in this kind of work. Fostering a culture that rewards faculty for innovative teaching means tolerating failure, creating space within the current evaluation structure to take risks in teaching, and making it possible for technology-enhanced learning to contribute toward a positive career trajectory. This may mean revising tenure and promotion guidelines or otherwise shaping the evaluation structure to better reward faculty innovation in teaching.

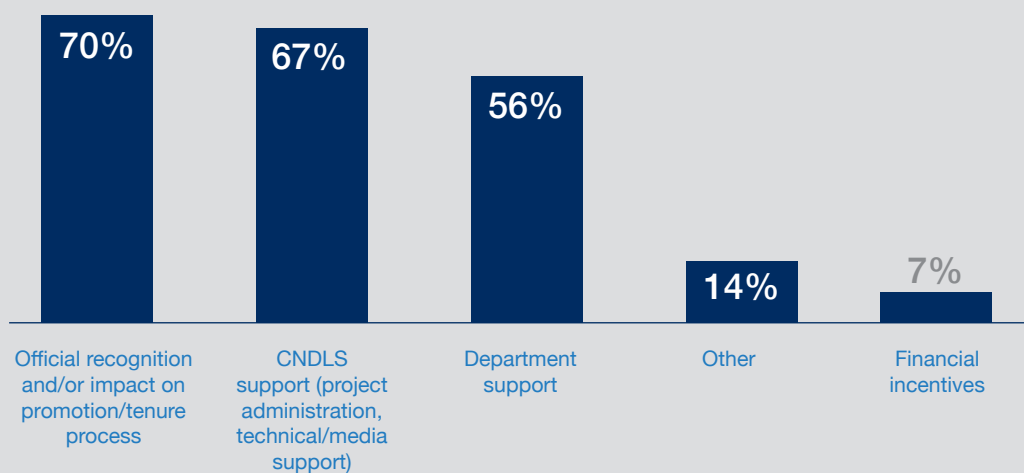
2

Support best practices for technology-enhanced learning

Faculty report that technical, media, and project administration support are still needed in getting faculty across campus engaged in this kind of work. In order to expand support to all faculty wishing to integrate technology into their teaching at our university, models need to be developed that are flexible, cost-effective, scalable, and grounded in best practices in technology-enhanced learning. One option under consideration is the development of a peer-tutoring center to serve as a support and innovation hub for faculty and students seeking guidance on how to use Georgetown-supported tools, including Domain of One's Own, Canvas, WordPress, and others.

(continued on next page)

"What do you think would be most helpful in getting faculty across campus engaged in this kind of work?"*



*Based on a 2016 ITEL faculty survey.

3

Encourage institutional transformation

For transformation and widespread adoption to take place, technology-enhanced learning (TEL) ideas need to be shared, discussed, and debated among faculty across the university. Faculty-led conversations and outreach efforts can help transition the lessons learned through ITEL grants into a broad knowledge base, enabling good practices to spread organically through peer networks and community-building. This might unfold through planned Faculty Learning Communities, TEL faculty ambassadors, or department- and school-led efforts, as well as by partnering with students and other support units on campus.

4

Continue innovation and experimentation

For Georgetown to stay at the forefront of technological innovation and ready for the next big change in higher education, we must push the boundaries of what is possible, and be curious about how our students learn.

Experiments within larger courses and key course sequences as well as at the program level—such as graduate-level micromasters certificates—would support transformative curricular change at Georgetown. To ensure that these efforts lead to evidence-based practices, ideally funding would be made available to continue to support assessment and research on how pedagogical, curricular, or technological changes impact student learning.

5

Pursue creative collaborations in open online learning

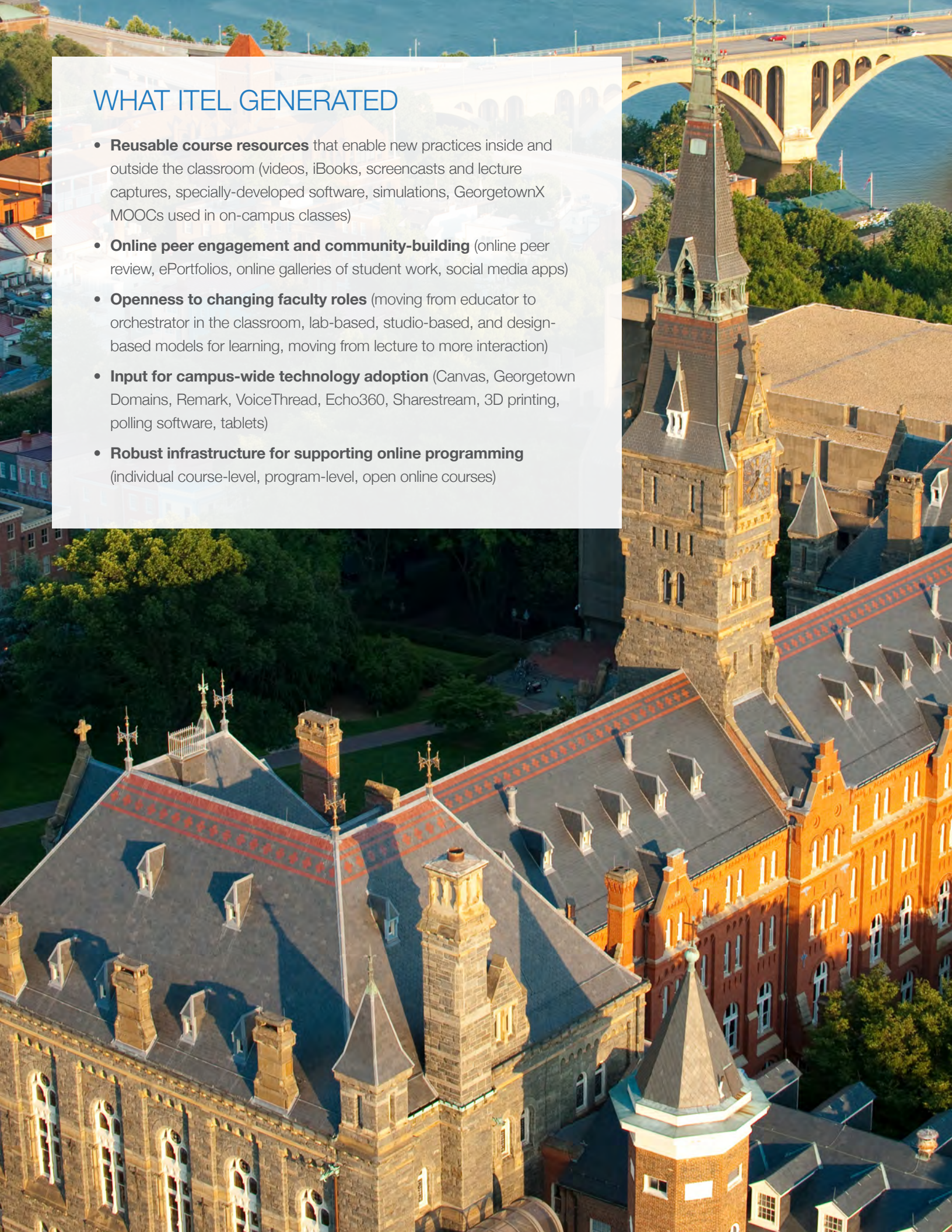
We will continue to develop internal and external partnerships—for example with non-governmental organizations, other universities, or centers and units within our own university—to enable Georgetown to creatively fund and design MOOCs and other online courses for a range of audiences. By refining our models of online learning and MOOC course design, we can continue to develop flexible approaches to skills development and paths to degrees, while creating re-usable resources for use in multiple course contexts, including face-to-face.

Faculty suggestions for how the university could continue to support technology-enhanced learning:

- Create an ITEL alumni community
- Reach junior faculty
- Have dedicated tech specialists for each department or field
- More visibility for ITEL projects and case studies
- Continue to offer cohort opportunities
- Workshops highlighting best practices from GU and beyond

WHAT ITEL GENERATED

- **Reusable course resources** that enable new practices inside and outside the classroom (videos, iBooks, screencasts and lecture captures, specially-developed software, simulations, GeorgetownX MOOCs used in on-campus classes)
- **Online peer engagement and community-building** (online peer review, ePortfolios, online galleries of student work, social media apps)
- **Openness to changing faculty roles** (moving from educator to orchestrator in the classroom, lab-based, studio-based, and design-based models for learning, moving from lecture to more interaction)
- **Input for campus-wide technology adoption** (Canvas, Georgetown Domains, Remark, VoiceThread, Echo360, Sharestream, 3D printing, polling software, tablets)
- **Robust infrastructure for supporting online programming** (individual course-level, program-level, open online courses)



ITEL OVERVIEW

From 2013-2016 233 Georgetown faculty participated in the Initiative on Technology-Enhanced Learning (ITEL)—more than twice the number as projected—reaching over 11,360 Georgetown students and enrolling over 220,000 global online learners. Through five rounds of funding, ITEL supported 162 grant projects focused on teaching and learning with technology. These projects included 55 medium-sized Open Track projects, 99 smaller Cohort projects, and the development, launch, and re-run of dozens of GeorgetownX MOOCs.

162
projects

233
faculty

11,360+
GU
students

226,670+
global
learners

ITEL GRANTS

MAY 2013
Round 1
28 projects

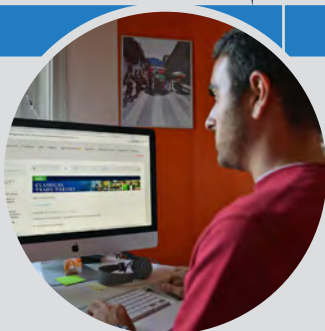
DECEMBER 2013 • Round 2
36 projects

MAY 2014
Round 3
35 projects

DECEMBER 2014 • Round 4
24 projects

2013

2014



OPEN TRACK PROJECTS

Moderately-sized individual and collaborative faculty projects experimenting with technologies and pedagogical designs to improve teaching and student learning at the course or course sequence level.

55 projects • **140** faculty members • **8,100+** students

COHORT PROJECTS

Small-scale experimentations with new and proven educational technologies by interdisciplinary faculty groups meeting over the course of a semester.

99 projects • **81** faculty members • **3,260+** students

GEORGETOWNX MOOCS

Focused on the development, launch, and reiteration of massive open online courses reaching learners around the world.

8 projects • **15** courses • **29** iterations • **226,670+** students



GOALS, OUTCOMES, AND IMPACT

The ITEL Initiative was born out of ambitious goals: to discover and foster new ways to teach and learn through a thoughtful use of cutting-edge technology, and to make these discoveries available well beyond the physical walls of Georgetown University. These ambitions have guided the selection of grant projects, and, as a result, the far-reaching impact of ITEL is already evident on students and faculty here on the hilltop and beyond.

In the following pages, we present evidence and examples of how ITEL is enhancing student learning outcomes, impacting and transforming faculty practice, and making aspects of a Georgetown education available to global audiences through GeorgetownX MOOCs. Beyond local effects on teaching and learning, ITEL projects are part of a larger conversation, one rooted in the most lively and productive areas of research in the field of technology-enhanced learning. The outcomes of this Initiative are contributing to the growing body of research and knowledge in pedagogical and technological innovation, as evidenced through the production of dozens of papers and presentations.

ITEL GOALS

- To identify, develop, assess, and model new ways of using existing and emerging technological resources **to enhance student learning** to meet the continually expanding needs and expectations we place on our curriculum.
- To identify, develop, and assess **changes in faculty roles and practices** inside and outside the classroom due to technology-enhanced pedagogies that enable enactment of our values, such as faculty-student interaction and high-impact learning, which are at the heart of our educational mission.
- To identify, develop, and assess ways to **make aspects of a Georgetown education available to wider audiences** around the world.

ENHANCING STUDENT LEARNING

In order to meet the first goal of identifying, developing, assessing, and modeling new ways of using technology to enhance student learning, all awarded ITEL projects developed their own goals and conducted their own assessments. Assessment practices and tools ranged from student surveys and instructor observation to carefully-designed semi-experimental studies, yet all were designed to assess the impact that these new practices and tools were having on student learning. An evaluation of the 55 large Open Track projects found that the great majority—nearly 70%—had a measurable impact on student learning.

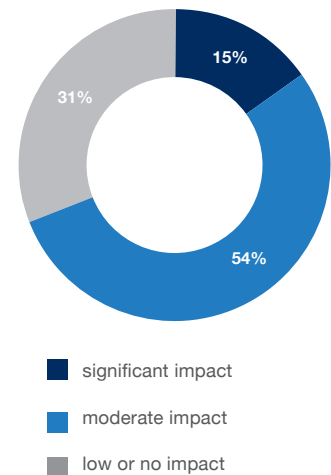
Through projects focused on games and simulations, hybrid and blended learning, flipped classrooms, global synchronous tools, open online learning, and much more, faculty have created opportunities for students to build skills essential to future professional success, such as harnessing big data, using cutting-edge research software, and implementing collaborative design-based approaches to problem-solving.

In the pages that follow, we highlight the research and assessment results from projects pushing the boundaries in the areas of:

- games and simulations for learning
- flipped, hybrid, and online learning
- social and collaborative learning
- tablet and mobile learning

The findings from these projects, and others like them, can now serve to guide the university toward sustained and widespread technology-enhanced learning practices that enable deeper student learning through engaged, playful, and imaginative solutions to the challenges facing learners today and into the future.

Impact on Student Learning





Enhancing Student Learning

GAMES AND SIMULATIONS FOR LEARNING

Games and simulations have been shown to increase engagement, motivation, time on task, and learning outcomes.¹ Because of their promise, games and simulations, as well as other types of personalized and adaptive learning approaches, have been an area of significant attention and exploration both within ITEL and the larger field of education.^{2,3} Following the design and implementation of a branching simulation and two online game projects in Round 1 of ITEL, CNDLS facilitated two semesters of the gaming and simulation cohort and incorporated simulations into two MOOCs. Through ITEL, 23 faculty participated in the creation of an educational game, simulation, or interactive tutorial based on an adaptive learning framework. **Many of these projects set up experimental and quasi-experimental studies to assess the impact of their new learning tools on students, finding in all or most cases trends toward more positive outcomes for students who used the game, simulation, or tutorial.** Additionally, in one case, use of the simulation also resulted in greater time efficiency during lab time and fewer broken glass tubes.

Guided Instruction through Online Games

Ron Leow (Spanish & Portuguese) designed, oversaw the construction of, and studied two educational games through his ITEL project. In the first study, he conducted a randomized controlled trial to evaluate the effectiveness of an educational game designed to help students understand the complex Spanish *gustar* verb structures.

Seventy beginning Spanish students were randomly divided into three groups for comparison: a “guided instruction” group that played the *Gustar Maze Game*; a “deductive instruction” group in which a teacher explained the grammatical rules and provided the same offline practice examples as the maze game; and a control group that received no instruction. Groups were compared on three learning tasks: two “productive” tasks which measured students’ ability to produce the *gustar* structure orally and in writing, and a multiple-choice written recognition assessment.

While both the guided instruction (using the maze) and deductive instruction groups improved across time and outperformed the control group, the guided instruction group achieved higher learning outcomes on productive tasks and experienced greater retention of learning.⁴ An additional empirical study was conducted to study the effects of a game designed to promote deeper processing of the distinctions between the Spanish prepositions *para* and *por*. Similar results were found, with both studies empirically supporting the effectiveness of interactive games for use in a non-intensive language course.

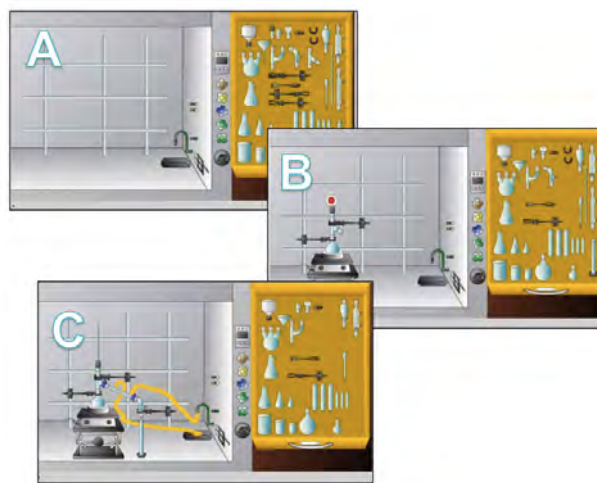
Learn more at: itel.georgetown.edu/projects/leow/

Chemistry Lab “Virtual Build”

Ron Davis (Chemistry) created an interactive organic chemistry virtual lab using Articulate Storyline. Using the virtual lab, students were able to construct a chemistry apparatus prior to attempting the actual exercise in the physical lab. Davis assessed the impact of this exercise by splitting his students into three groups: a control group that did not use the virtual lab, a group that accessed the lab remotely from their own personal devices, and a group that used a large touchscreen version of the virtual lab.

Students who used the virtual build reported improved confidence and were able to build their apparatus in the lab to a similar level of quality to their peers, but in significantly less time (over 10 minutes more quickly than the control group). It also resulted in fewer broken glass tubes, fewer student tears, and freed-up lab time for other instruction. When aggregated across nearly two hundred students in fourteen sections of the course, this amounted to a substantial time-savings during which additional instruction and reflection could take place in the lab.

Learn more at: itel.georgetown.edu/projects/davis/



ABOVE: Ron Davis' interactive virtual Chemistry lab.

¹ Hamari, J., Shernoff, D., Rowe, E., Coller, B., Asbell-Clarke, J., & Edwards, T. (2016). Challenging games help students learn: An empirical study on engagement, flow and immersion in game-based learning. *Computers in Human Behavior*, 54, 170-179.

² Sitzmann, T. (2011). A meta-analytic examination of the instructional effectiveness of computer-based simulation games. *Personnel Psychology*, 64(2), 489-528.

³ Wouters, P., van Nimwegen, C., van Oostendorp, H., van der Spek, E. D. (2013). A meta-analysis of the cognitive and motivational effects of serious games. *Journal of Educational Psychology*, 105(2), 249-265.

⁴ Cerezo, L., Caras, A., & Leow, R. P. (2016) The effectiveness of guided induction versus deductive instruction on the development of complex Spanish 'gustar' structure: An analysis of learning outcomes and processes. *Studies in Second Language Acquisition*, 38(2), pp. 265-291.



Enhancing Student Learning

FLIPPED, HYBRID, AND ONLINE LEARNING

Hybrid, flipped, and online courses free up class time and limited instructional space, reach students at a distance, and speed up the student feedback process.⁵ They can also lead to better learning outcomes for students, partially, perhaps, because flipped courses intentionally create room for more active learning.^{6,7} **ITEL projects were able to reap these additional benefits while finding that student outcomes were in some cases favorable to, and always at least equivalent to, traditional classes.** In addition, ITEL supported the development and launch of Georgetown's first MOOCs through edX and paved the way for significantly ramping up the design and production of online courses across the university.

Flipped-learning Model for Medical Students

Adam Myers (School of Medicine), along with School of Medicine collaborators **Susan Mulroney** and **Jennifer Whitney**, created a Georgetown Downtown Special Master's Program (GTDT SMP) that used flipped-learning courses to create a self-directed approach to learning the same materials as Special Masters Program (SMP) students on the GU Medical campus. **In an unpaired t-test, the project team found that the average grade performance of the students taking the flipped-learning courses was statistically significantly higher than that of the students taking traditional courses.**⁸ Similar results have been found in subsequent years of administering the GTDT SMP and comparing scores.

Additionally, the team:

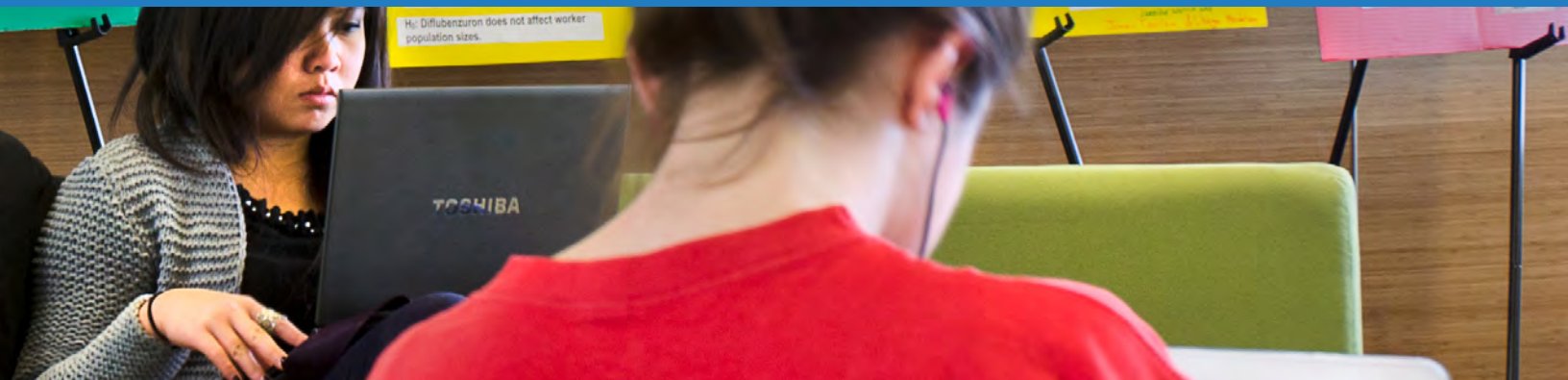
- Compared incoming academic backgrounds and grade point averages of the Downtown and Traditional SMP groups and found they were very similar.
- Surveyed students about whether the lecture captures and other materials were effective for their learning, and what their attitudes were toward hybrid learning, self-directed learning, and flipped classroom experiences.
- Captured statistics about student utilization of the online materials, such as views of videos and attempts at practice tests.

Learn more at: itel.georgetown.edu/projects/myers/

⁵ Herreid, C., & Schiller, N. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching*, 42(5), 62-66.

⁶ U.S. Department of Education, Office of Planning, Evaluation, and Policy Development (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*, Washington, D.C.

⁷ Jensen, J., Kummer, T., & Godoy, P. (2015). Improvements from a flipped classroom may simply be the fruits of active learning. *CBE Life Sciences Education*, 14(1), ar5.



Comparable Proficiency Gained through Hybrid Learning

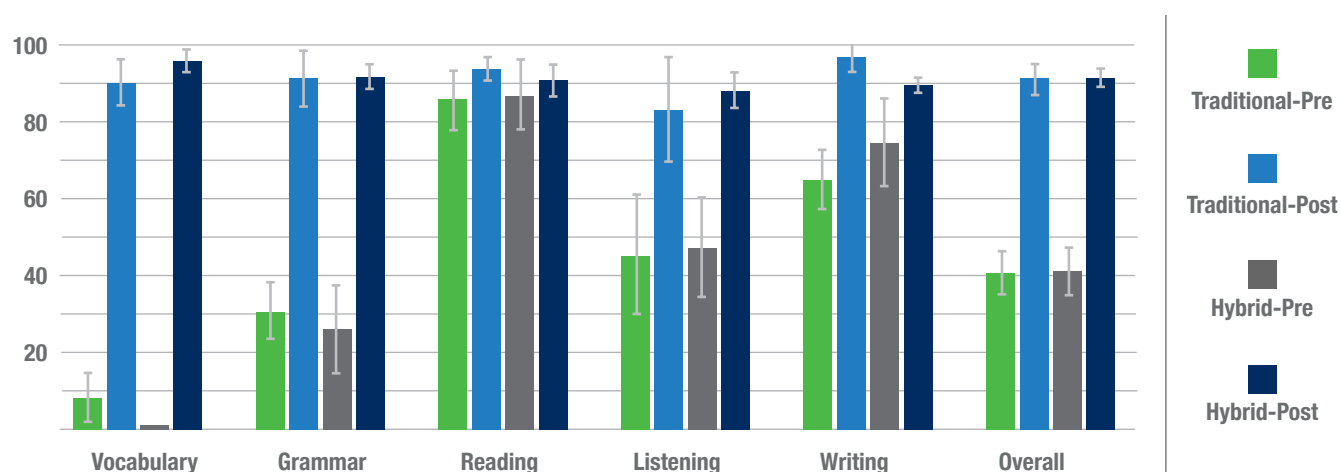
Donatella Melucci (Italian) and **Louise Hipwell** (Italian) designed a study comparing the learning outcomes of students in two simultaneous implementations of their courses, Advanced Italian I (Fall 2014) and Advanced Italian II (Spring 2015). One implementation used a hybrid format and the other used a traditional, face-to-face format. In the hybrid course, two in-class sessions were replaced with online instruction in order to attract students who otherwise could not manage the five-day-a-week class meeting schedule of advanced language courses.

The instructors aimed to investigate whether students taking a course in either format could attain a comparable level of proficiency in oral production, written production, reading comprehension, listening comprehension, grammar knowledge, and vocabulary acquisition.

Based on an analysis of baseline student language ability, performance throughout the semester, and scores on an identical final exam, the instructors found that **students in the hybrid class performed equally well on the final assessments as students in the traditional course.**⁹

Learn more at: itel.georgetown.edu/projects/melucci-hipwell/

Figure 1: Comparison of pre-post Traditional and Hybrid Advanced Italian Performance, Fall 2014



⁸ Mulroney, S., Whitney, J., Vovides, Y., Pennestri, S., & Myers, A. (2016). Effectiveness of the flipped classroom in an established medical and graduate curriculum: The Georgetown Downtown inaugural year. *16EDULearn Proceedings*: 7846-7851.

⁹ Hipwell, L. & Melucci, D. (2016). From traditional to hybrid: A comparative study of student performance and perceptions. *Teaching Italian Language and Culture Annual*, 19-70.



Enhancing Student Learning

SOCIAL AND COLLABORATIVE LEARNING

Learning is more than just an individual cognitive activity; it takes place in a social context, and can be enhanced through learning designs that invite collaboration.¹⁰ Many web 2.0 tools—such as ePortfolios, WordPress, Omeka, VoiceThread, and Google Apps—are making it easier for faculty to implement social, reflective, and collaborative learning activities both during class time and online between class meetings. A total of 13 Open Track ITEL projects used such technologies to facilitate collaboration, group work, and social connections, but two practices in particular gained significant traction within the Initiative: (1) peer-to-peer language learning through video and text (telecollaboration), and (2) ePortfolios and student websites. This second practice was the focus of two ITEL cohorts, one on ePortfolios and the other on Domain of One's Own. **Assessments of learning in these types of projects often took a qualitative approach, finding that students reported or evidenced gains in areas such as cultural competence, confidence, and connecting life experiences to what they were learning.**

Teletandem Language Learning

Michael J. Ferreira (Spanish and Portuguese), along with colleagues in many of Georgetown's language departments, focused an ITEL project on promoting intercultural communication and authentic language practice. Teletandem matches students with partners in other countries through real-time videoconferencing that is based on the principles of reciprocity, segmentation, and student autonomy. Based on survey responses from students who experienced teletandem in seven different languages, **an overwhelming majority (around 80%) said they enjoyed or very much enjoyed learning a foreign language through teletandem.** Similar percentages of students said they would be willing to do teletandem again and would recommend this course to other students. Students reported learning most in the following areas:

- New vocabulary and idiomatic expressions
- Speaking more fluently and with more confidence
- Oral comprehension and new comprehension strategies
- Cultural information and ways of thinking about their partner's country and culture

Learn more at: itel.georgetown.edu/projects/ferreira/

¹⁰ Alavi, M. (1994). Computer-mediated collaborative learning: An empirical evaluation. *MIS Quarterly*, 18(2), 159-174.



Blogging For Reflection While Studying Abroad

Betsi Stephen (Demography, SFS) investigated to what extent incorporating student blogs and ePortfolios into study abroad experiences would improve student learning in the areas of reflection, integration, and visibility. In order to assess the students' blog posts, Stephen created a comprehensive rubric based on aspects of the following AAC&U Value Rubrics: Critical Thinking, Oral and Written Communication, Global Learning, Integrated Learning, Intercultural Knowledge and Competence, Information Literacy, and Lifelong Learning. Using the rubric, Stephen and multiple independent raters scored student blogs and ePortfolios in order to assess how well students demonstrated their abilities in these areas at the beginning and at the end of their study abroad term.

Student work was scored using the rubric criteria on a scale from 1-4, which was then analyzed to see whether each student had improved from first to final blog post. At both study abroad sites **the results showed that students had improved empathy skills, connections to experience, and reflection by the end of their semester abroad.** Site directors and instructors were able to use the areas in which students were not seen to be markedly improving (e.g. cultural diversity, language, and use of supporting material) to better promote these skills during students' study abroad semester.

Learn more at: itel.georgetown.edu/projects/stephen/



"The ITEL grant was instrumental in developing our City of Florence online museum, which vividly chronicles students' reflections of their study abroad experience at Villa Le Balze."

— Betsi Stephen



Enhancing Student Learning

TABLET AND MOBILE LEARNING

Tablet and mobile computers are gaining a seat in higher education classrooms. This is likely because they can provide students rapid access to information and promote collaborative learning, as well as personalize the learning experience and provide an interactive and fun platform for creativity.¹¹ ITEL projects that focused on using tablets and mobile technology aimed to facilitate real-time markup and drawing of graphs during lecture, display and share images captured by digitally-equipped microscopes in a biology lab, and create more interactive discussions by quizzing via mobile phones and other polling devices. The popular “Deepening Discourse and Engagement with Tablet Computing” cohort ran for three semesters and attracted 25 faculty members. In this cohort, faculty used tablets to foster everything from close reading and annotation of texts to practicing medical suturing techniques. **Assessments focused on student performance showed some improvement over prior years or comparison groups, and students indicated that they thought their learning benefitted as well.**

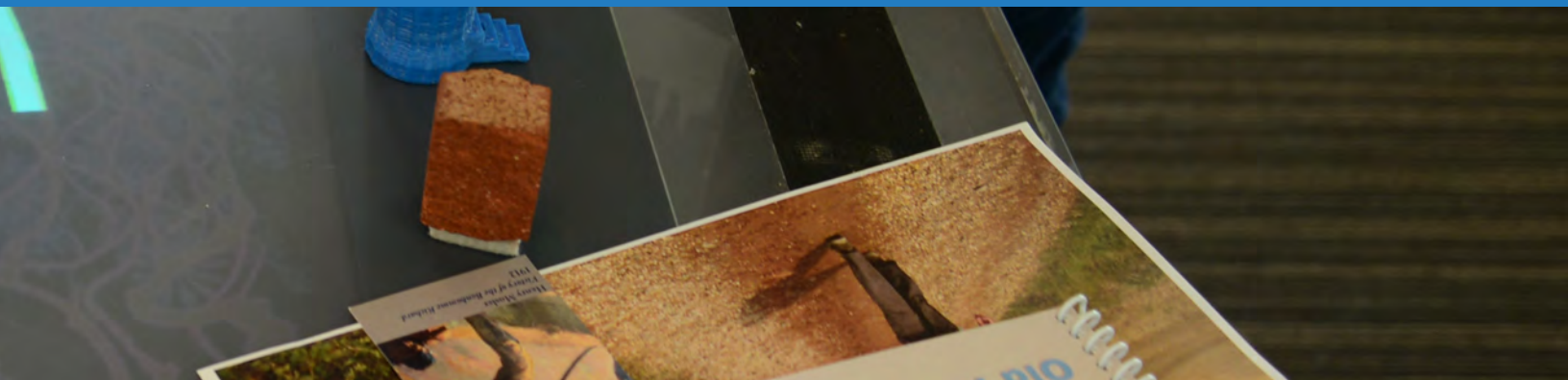
Enhancing Lectures with Real-time Graphing

Arik Levinson (Economics) used a Windows tablet computer to combine static images with real-time illustrations of graphs side-by-side, and easily record his digital demonstrations using lecture capture technology as a review tool for students. This solved the significant problem he had in the past of not being able to create new graphs during class in response to student questions. In order to evaluate his students’ experience, he added supplementary questions to the year-end course evaluations, added an additional question to a year-end homework assignment, and compared final exam performances to the prior year.

Ninety-six percent of Levinson’s students agreed or strongly agreed that their learning benefitted overall from the way the instructor used technology in this course. When asked specifically about the tablet’s use during lecture, 85% of students thought the tablet was a better technology than alternatives they had seen or heard about for large lectures. Additionally, **exam scores were better in the ITEL project year than in the year prior, both on graphing questions (the content dynamically illustrated by tablet during lectures) and non-graphing questions.** However, the instructor cautions against attributing that gain to the ITEL project since the tests may have differed.

Learn more at: itel.georgetown.edu/projects/levinson/

¹¹ Rossing, J., Miller, W., Cecil, A., & Stamper, S. (2012). iLearning: The future of higher education? Student perceptions on learning with mobile tablets. *Journal of the Scholarship of Teaching and Learning*, 12(2), 1–26.



Tablet-Based Student Presentations

Jason Tilan (Human Science) and **J.P. Hyatt** (Human Science) sought to compare the effects of student presentations using tablet-based virtual whiteboards versus physical whiteboards in their physiology course. Students were randomly assigned to either a control or experimental group that met on separate days of the week. This course was held in Reiss 152, where extensive whiteboard space, four wall monitors, and a large centrally located monitor allow presenters flexibility and control over multiple devices. Additionally, Zoom was used to project, record (with consent), and facilitate remote attendance for all presentations.

Six features of the students' presentations were scored by both course instructors, students in attendance, and an external reviewer. Presentations were rated on a scale from 1-7, from poor to excellent. **In both semesters of the study, ratings were higher for presentations using tablets than for whiteboard "chalk talks."** Chalk talks and tablet usage will be incorporated in future iterations of this course, with the instructor noting that the number of tablets and enrollment is the greatest challenge.

Learn more at: itel.georgetown.edu/projects/tilan-hyatt/

Interactively Visualizing Music

Ben Harbert (Performing Arts) and his team developed tablet software that enables students to explore and annotate timbre, dynamics, articulation, and rhythmic nuances, among other musical attributes. "My major goals were to give students confidence in their ability to listen carefully, to connect ideas from the course and readings to the sounds themselves, and to create a record of their ideas for use later in preparing for the listening-intensive final exam."

In accessing students' musical annotations, Harbert was able to understand how students listened, the moments in songs they found significant, and what ideas they connected to the songs. According to Harbert, it was invaluable to "get inside their ears" in a way he never had before, helping him to understand how students listen and enabling him to maintain a dialogue about listening with each individual student.

Learn more at itel.georgetown.edu/projects/harbert/



FACULTY IMPACT

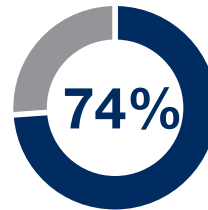
The goals of the Initiative are rooted in the notion that technology use in teaching must always be in the service of the greater good of the teaching and learning endeavor—such as making more effective use of faculty time, enabling more frequent faculty-student interaction, and helping students engage in increasingly sophisticated and independent work with research materials and data using emerging tools in their fields. These and other similar goals drove faculty innovation and inquiry in their use of technology to enhance the learning experience of their students.

At the conclusion of five rounds of projects, **84% of ITEL faculty are continuing to use the tools and practices explored in their ITEL project**, demonstrating that the initial investment has had a lasting impact on how faculty are using technology in their teaching. Additionally, for 36% of the faculty involved in the Open Track projects, the insights and discoveries detailed in their project reports revealed that the experience **had a substantial or transformative impact on their teaching**, such as learning to optimize use of class time, perfecting the process and art of online teaching, and focusing on learning outcomes.

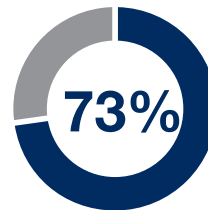
35% of ITEL faculty report that practices they developed through ITEL are now being adopted and used by other faculty, demonstrating that a spread effect throughout the university has occurred to some extent. For instance, one large project at the Medical School has led to wider adoption of flipped classroom approaches across the medical curriculum. **In nearly 25% of the projects, faculty reported that their project precipitated a change at a curricular or institutional level**, evidence that ITEL has to some extent helped fuel larger transformations at our university.

WHAT FACULTY SAY

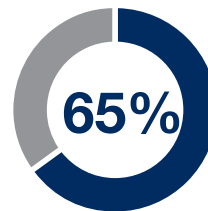
about the impact of their ITEL project



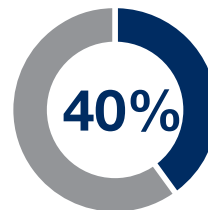
It influenced how I use technology in my teaching.



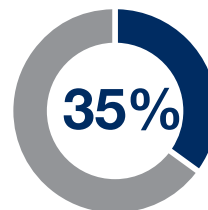
It influenced my teaching practice or strategies.



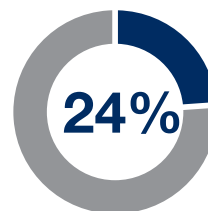
I developed stronger connections with other faculty or colleagues.



It impacted my research, publishing, or speaking practice.



Other faculty have adopted a technology or practice explored in this project.



It precipitated change at a curricular or institutional level.

“My ITEL experience taught me how to rethink teaching in the classroom in three ways: (1) to better link the course topics with the learning experience of students, (2) to improve the engagement of students in the classroom, and (3) to orchestrate multiple and different learning experiences within any single class.”

– Robert Thomas, Marketing (MSB)

“This project was an excellent opportunity for me to develop my thoughts and ideas on how to use game-based technology to assist students learning Arabic. It was especially useful in allowing me to learn many aspects of several multi-media, multi-language software resources and perhaps most important enabled me to establish a professional relationship with the ITEL staff.”

– Ghayda Al-Ali, Arabic and Islamic Studies



GeorgetownX

FINDINGS AND DATA

Since joining the edX consortium in early 2013, Georgetown has developed a portfolio of 15 MOOCs that have brought the core expertise of our university to an international stage through courses like “Genomic Medicine Gets Personal,” “Terrorism and Counterterrorism,” and “Introduction to Bioethics.” These courses have attracted learners with a wide variety of motivations, goals, demographic characteristics, and experience levels.

As a Contributing Charter Member of edX, Georgetown joined a consortium of top-tier universities and gained access to a platform with more than five million active users. Georgetown’s leadership role in the edX network, which included hosting and co-directing the 2015 edX Global Forum, has helped forge a robust knowledge-sharing community around global online learning.

The MOOC course development supported through ITTEL has deepened our commitment to innovative pedagogy and built connections to other institutions and students all over the world. With each MOOC launched or reiterated, we continue to embrace integrative learning outcomes, revenue-generating potential, and the flexible approaches to skills development and curricular enrichment that these types of online courses can offer.

226,670+

students enrolled

7,252 certificates

15 GeorgetownX
MOOCs

29 course
iterations

GeorgetownX MOOCs

Demystifying Biomedical Big Data:
A User’s Guide

Genomic Medicine Gets Personal

Global Business in Practice

Globalization’s Winners and
Losers: Challenges for Developed
and Developing Countries

Impact Evaluation (in
development)

Introduction to Bioethics

Learning Design (in development)

Terrorism and Counterterrorism

Terrorism and Counterterrorism:
An Introduction

The Divine Comedy: Dante’s
Journey to Freedom: Part 1
(Inferno)

The Divine Comedy: Dante’s
Journey to Freedom: Part 2
(Purgatorio)

The Divine Comedy: Dante’s
Journey to Freedom: Part 3
(Paradiso)

Preparing for the AP Physics C:
Electricity and Magnetism Exam

Quantum Mechanics for Everyone

Sign Language Structure,
Learning, and Change (in
development)

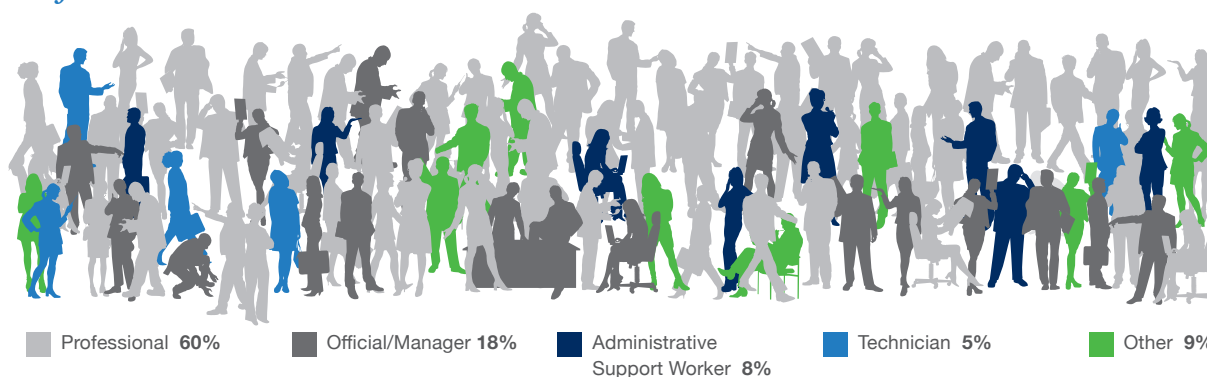
LEARNER DEMOGRAPHICS

Using edX enrollment data, along with responses from surveys CNDLS administers before and after each course, we are gaining a clearer picture of the learners enrolled in our MOOCs. To date, more than 200,000 learners have enrolled from more than 200 countries across the globe. Most of our learners are full-time employees, and the majority of these learners already have an advanced degree. This is largely in line with the findings from UPenn, MIT and Harvard. However, in contrast with other universities where significantly more males enrolled in MOOCs than females, Georgetown's MOOC enrollments tilt the other way with a slight female majority.

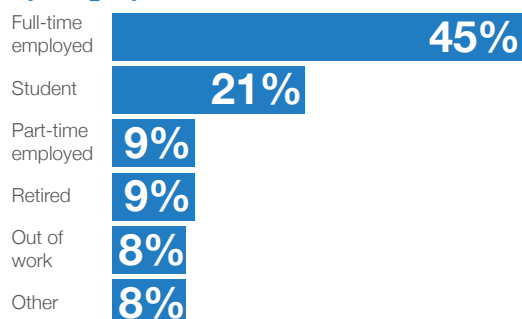
51% FEMALE

49% MALE

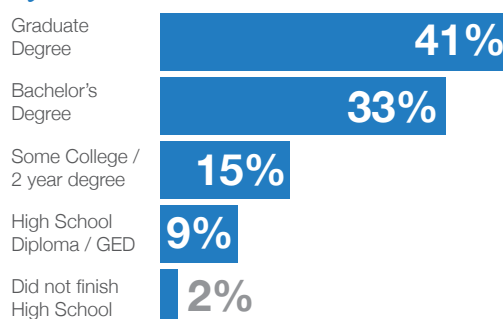
By Profession



By employment status



By education level

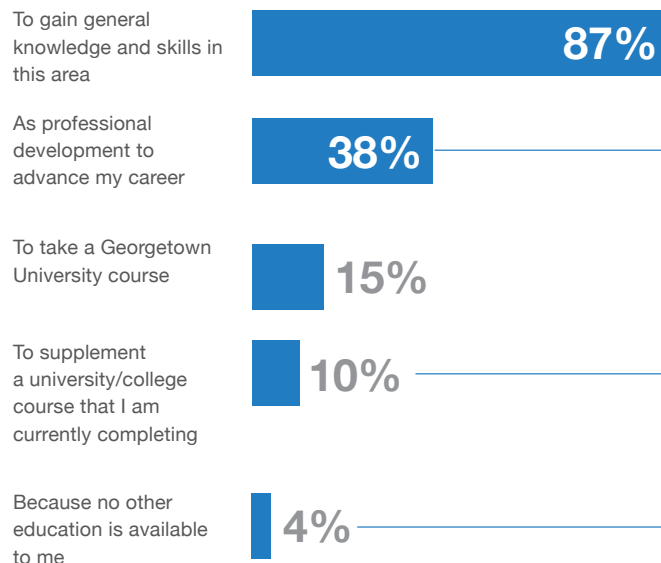


By English language proficiency

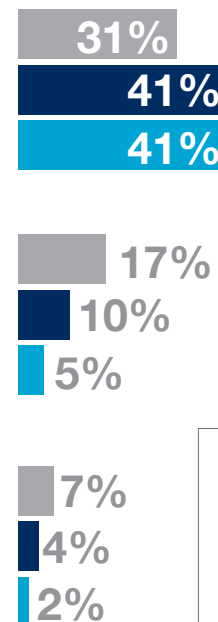


LEARNER MOTIVATIONS

Why did you choose to register for this course?



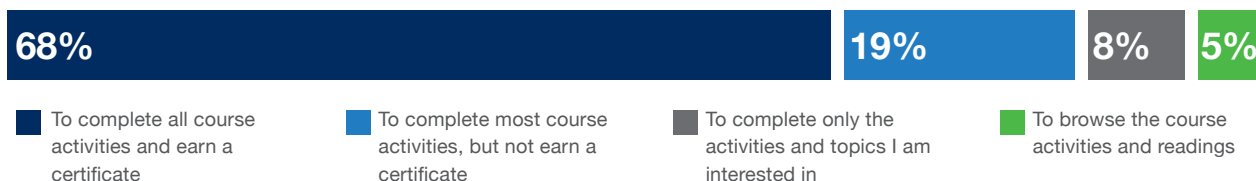
By highest level of education



KEY

- Some college or less
- Bachelor's degree
- Graduate degree

What are your expectations for your achievement in this course?



Part of the value of MOOCs is the flexibility and access they provide to a wide variety of learners with different goals and motivations for engagement. Eighty-seven percent of survey respondents stated that they came to our courses to gain knowledge and skills. More than a third of respondents (38%) were taking the course to advance their careers, 15% wanted to take a Georgetown course, and 14% were using it to supplement their university education or because no other education was available to them.

Intent to complete and earn a certificate in our MOOCs was high, with 68% of respondents aiming to earn a certificate and an additional 19% planning to complete all or most course activities, but not earn a certificate. The remaining 13% intended to focus their efforts not toward a certificate or completion but instead on aspects of the course that most interested them or to explore the material in an open-ended way.

WHERE WE'VE BEEN, WHERE WE'RE GOING

Extending Reach, Revenue, and Capacity

Over the past three years, CNDLS has gained extensive expertise in partnering with faculty and subject matter experts to develop a variety of online learning experiences, significantly expanding our global presence. In addition to our MOOCs, we are applying these same capacities towards the development of online certificate programs, undergraduate courses, graduate programs, and open learning professional development here at Georgetown, as well as at other area institutions and schools. This work in online learning, a natural outgrowth of our initial investment in MOOCs, has the capacity to significantly extend our reach and revenue.

Strengthening Research Practice

MOOCs also serve as an important catalyst for educational research. Each course generates large and detailed datasets, including information about learners' motivations, behaviors, and learning experience. CNDLS has already developed several research projects leveraging these data, including both applied and more scholarly-driven research projects. Going forward, we look forward to strengthening our emphasis on research by exploring one or more research questions with each new MOOC.

Innovative Pedagogical Experimentation

Over the past three years we have also explored different structures and pedagogical models for our MOOCs. For instance, in 2015 we launched a self-paced version of Globalization's Winners and Losers, a course format that allows students to move through the lectures and materials as quickly or as slowly as they like and download a verified certificate from the edX dashboard when they reach a passing grade.

We have also increasingly seen MOOCs as a trigger for innovation here on campus, with faculty using MOOC materials and exercises as a part of their traditional, face-to-face courses. Going forward, we intend to work closely with departments, programs, and faculty to identify ways to integrate and leverage MOOCs to add value for on-campus students.

WHAT LEARNERS SAY



agreed or strongly agreed that
“the course clearly communicated
important learning goals.”



agreed or strongly agreed that
“I can apply the knowledge I gained in
this course to my work or other
nonclass related activities.”



agreed or strongly agreed that
“learning activities helped me construct
explanations/solutions.”



agreed or strongly agreed that
“course activities increased my
curiosity about the topic.”



ABOVE: Georgetown University Provost Robert Groves with other panelists at the 2015 edX Global Forum

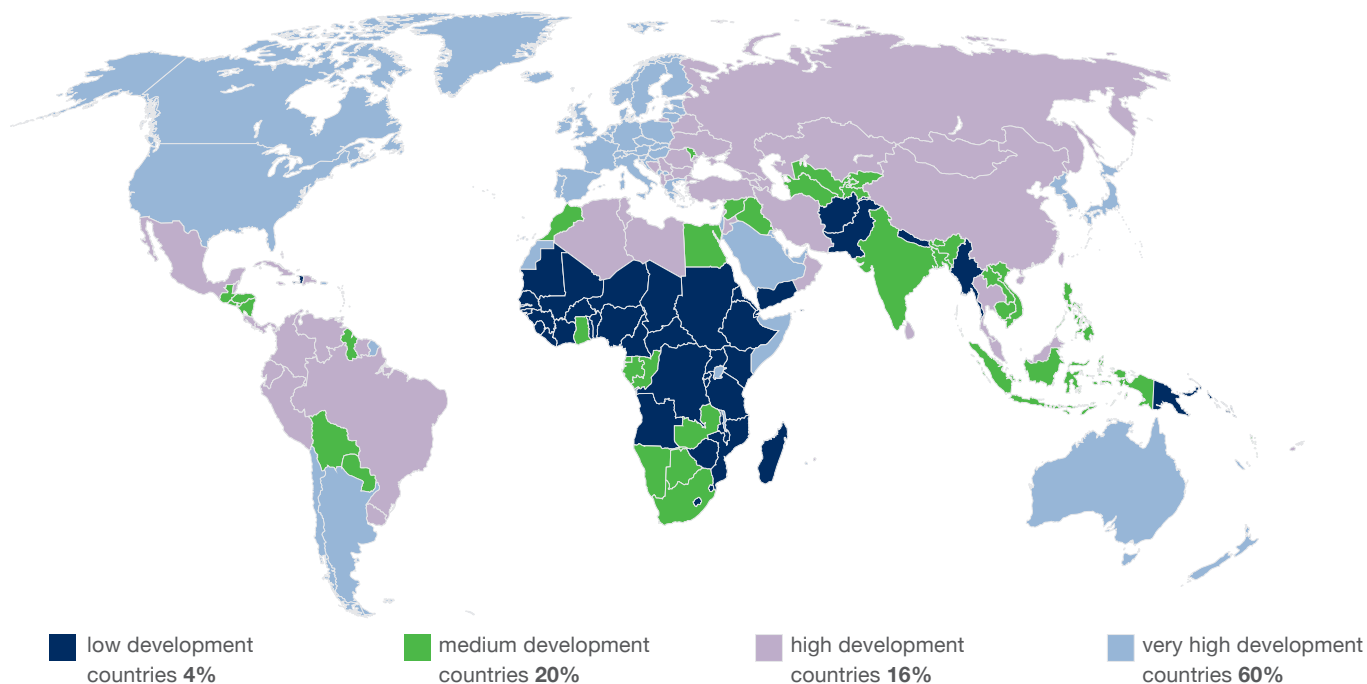
EDX GLOBAL FORUM

Georgetown University and CNDLS hosted edX's annual Global Forum on campus and in Washington, D.C., November 8-10, 2015.

This event brought together over 360 edX partner members from around the world to discuss online learning and collaboratively explore emerging trends in online education. Highlights included remarks by Georgetown Provost Robert Groves and by United States Chief Technology Officer Megan Smith, which sparked discussions on such topics as how data analysis can inform MOOC design and what role MOOCs can play in hybrid course formats.

REACHING GLOBAL LEARNERS

24% of GeorgetownX MOOC participants come from low and medium development countries*



*As defined by the UN's Human Development Index. Enrollment data as of September, 2016.

ASSESSMENT AND SCHOLARLY ACTIVITY

Every ITEL project conducted assessment activities, including assessments of impact on student learning outcomes, student surveys exploring perceptions and experience, faculty reflections, and in some cases more formal education research projects. See the following pages for a list of publications and presentations resulting from ITEL projects.

This scholarly work has helped several ITEL projects garner public attention and recognition. For example, **Betsy Sigman** (MSB), along with a graduate student and four CNDLS staff, received the 2016 Innovation in Teaching Award from the Decision Sciences Institute for their teaching brief *Visualization of Twitter Data in the Classroom*, which was based on Sigman's ITEL Project. The paper was published in the *Decision Sciences Journal of Innovative Education* (DSJIE): Volume 14, No. 4.

- 57** presentations at national and international conferences
- 20** IRB submissions
- 13** presentations at on-campus institutes
- 11** articles and conference proceeding
- 6** book chapters
- 6** iBooks

PUBLICATIONS AND PRESENTATIONS

Publications

- Anderson, K., DesLauriers, P., Horvath, C., Slota, P., & Farley, J. (in press). From metacognition to practice cognition: The DNP e-Portfolio to promote integrated learning. *Journal of Nursing Education*.
- Cerezo, L., Caras, A., & Leow, R. (2016). Effectiveness of guided induction versus deductive instruction on the development of complex Spanish “Gustar” structures: An analysis of learning outcomes and processes. *Studies in Second Language Acquisition*, 38(2), 265–291.
- Davis, D., Hanacek, J., Myers, A., Mulroney, S., Pennestri, S., & Vovides, Y. (2015). Capturing, tracing, and visualizing the spread of technology-enhanced instructional strategies. In *EDULEARN 15 Proceedings: 7th International Conference on Education and New Learning Technologies*, 1020–1028.
- Demaree, D., Kruse, A., Pennestri, S., Russell, J., Schlafly, T., & Vovides, Y. (2014). From planning to launching MOOCs: Guidelines and tips from GeorgetownX. In Vincenti, Giovanni, Bucciero, Alberto, Vaz de Carvalho, Carlos (Eds.), *E-Learning, E-Education, and Online Training* (pp. 68–75). Bethesda, MD: Springer International Publishing.
- Hipwell, L., & Melucci, D. (2016). From traditional to hybrid: A comparative study of student performance and perceptions. *Teaching Italian Language and Culture Annual*, 19–70.
- Leow, R. (2015). *Explicit learning in the L2 classroom: A student-centered approach*. New York, NY: Routledge.
- Leow, R., Cerezo, L., Caras, A., & Cruz, G. (in press). CALL in ISLA: Promoting depth of processing of complex L2 Spanish prepositions. In R. DeKeyser & G. Prieto Botana (Eds.), *(Doing) SLA research with implications for the classroom (Reconciling methodological demands and pedagogical applicability)*. Amsterdam, The Netherlands: John Benjamins.
- Leow, R., Cerezo, L., Caras, A., & Cruz, G. (in press). Does one size fit all?: The hybridization of a language curriculum and targeted L2 features. In R. DeKeyser & G. Prieto Botana (Eds.), *(Doing) SLA research with implications for the classroom (Reconciling methodological demands and pedagogical applicability)*. Amsterdam, The Netherlands: John Benjamins.
- Maloney, E., & Ambrosio, F. (2015). MyDante: Contemplative reading and hybrid technologies. In C. D. Kloos, P. J. Muñoz-Merino, R. M. Crespo-García, & C. Alario-Hoyos (Eds.), *Trends in digital education: Selected papers from EC-TEL 2015 workshops CHANGE, WAPLA, and HybridEd*.
- Mori, Y., Omori, M., & Sato, K. (2016). The impact of flipped online kanji instruction on written vocabulary learning in introductory and intermediate Japanese language students. *Foreign Language Annals*, 49(4), 729–749.
- Mulroney, S., Whitney, J., Vovides, Y., Pennestri, S., & Myers, A. (2016). Effectiveness of the flipped classroom in an established medical and graduate curriculum: The Georgetown Downtown inaugural year. *16EDULEARN Proceedings*, 7846–7851.
- Ryshina-Pankova, M. (in press). Discourse moves and intercultural learning in telecollaborative chats. *Language Learning and Technology*.
- Serafini, E., & Pennestri, S. (2015). Clicking in the second language (L2) classroom: The effectiveness of type and timing of clicker-based feedback in Spanish L2 development. In Leow, R., Cerezo, L., & Baralt, M. (Eds.), *A Psycholinguistic Approach to Technology and Language Learning* (pp. 219–242). Boston, MA: De Gruyter Mouton.
- Shum, B. S., Sándor, A., Goldsmith, R., Bass, R., & McWilliams, M. (2017). Toward reflective writing analytics: Rationale, methodology, and preliminary results. *Journal of Learning Analytics*, 4(1), 58–84.
- Sigman, B., Selvanadin, M., Garr, W., Pongsajapan, R., McWilliams, M., & Bolling, K. (2016). Visualization of Twitter data in the classroom. *Decision Sciences Journal of Innovative Education*, 14(4), 362–381.
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- Suárez-Quian, C. (2014) *All-in-one anatomy exam review: Image-based questions & answers. Volume 2. The Thorax*. iBooks.
- Suárez-Quian, C. (2014) *All-in-one anatomy exam review: Image-based questions & answers. Volume 3. The Abdomen*. iBooks.
- Suárez-Quian, C. (2014) *All-in-one anatomy exam review: Image-based questions & answers. Volume 4. Pelvis and Perineum*. iBooks.
- Suárez-Quian, C. (2014) *All-in-one anatomy exam review: Image-based questions & answers. Volume 5. The Lower Limb*. iBooks.
- Suárez-Quian, C. (2014) *All-In-one anatomy exam review: Image-based questions & answers. Volume 6. The Head*. iBooks.
- Vovides, Y., Youman, T., Arthur, P., Davis, D., Ayo, E., Pongsajapan, R., McWilliams, M., & Kruse, A. (2015). LAK15 Case Study 2: Examining learners' cognitive presence in Massive Open Online Courses. *Learning Analytics Review*.
- Whitney, J., Mulroney, S., Barbee, P., & Myers, A. (2013). Use of lecture capture technology in a medical school environment. *The Advisor Online*, 33(1).

Presentations

- Baynes, B., Schoeninger, A., & Walter, R.** (2014, June). *MOOCs and me: Georgetown's experience with edX*. Presented at the New Media Consortium Summer Conference, Portland, OR.
- Baynes, B.** (2015, August). *MOOCs and libraries: A brewing collaboration* [Webinar]. In the National Information Standards Organization (NISO) Webinars.
- Cameron, D. & Lubkin-Chavez, J.** (2017, February). *Promoting medical student wellness using a hybrid online curriculum*. Presented at the Annual Society of Teachers of Family Medicine Conference on Medical Student Education, Anaheim, CA.
- Cunningham, D.** (2015, November). *Leveraging tablet technology for oral proficiency in German*. Presented at the American Council on the Teaching of Foreign Languages (ACTFL) Annual Convention, San Diego, CA.
- Cunningham, D.** (2016, May). *The affordances of tablet technology for process-based speaking instruction*. Presented at the Conference of the Computer Assisted Language Instruction Consortium (CALICO), East Lansing, MI.
- Cunningham, D.** (2016, September). *Verstärkung des Sprechunterrichts durch mobile Technologien und peer-review*. Presented at the German Teacher Virtual Conference (GETVICO), Goethe-Institut, USA.
- Cunningham, D.** (2016, November). *Engaged learning in German for business*. Presented at the Conference of the American Council on the Teaching of Foreign Languages (ACTFL), Boston, MA.
- Cunningham, D.** (2017, April). *How do you du? Negotiating German pronouns of address in telecollaboration for professional purposes*. Presented at the Annual Conference of the American Association for Applied Linguistics (AAAL), Portland, OR.
- Cunningham, D.** (2017, May). *Telecollaboration for professional purposes: Negotiating pronouns of address*. Presented at the Conference of the Computer Assisted Language Instruction Consortium (CALICO), Flagstaff, AZ.
- Demaree, D.** (2015, July). *GeorgetownX goes to high school: AP Physics C: Electricity & Magnetism*. Presented at the American Association of Physics Teachers Summer Meeting, College Park, MD.
- Demaree, D., Garr, W., & Church, S.** (2014, July). *The intersection of learning design and game design: A robust strategy for creating effective educational games*. Presented at the Physics Education Research Conference, Minneapolis, MN.
- Demaree, D., Garr, W., Rostain, T., McWilliams, M., Salah, J., Gaston, T., & Church, S.** (2014, October). *Developing a robust design strategy for creating an effective educational game: A collaboration of faculty, learning designers, and game developers*. Presented at the International Society for the Scholarship of Teaching and Learning (ISSOTL) Annual Conference, Quebec City, Canada.
- Ferreira, M.** (2014, March). *Multimodal video conferencing in the foreign language classroom: Teaching and Learning Foreign Languages Online*. Presented at the 1st International Meeting on Language Learning in Tandem: Past, Present, and Future, Miami, FL.
- Francomano, E.** (2016, February). *The digital Libro project*. Presented at the Medieval Academy Annual Meeting, Boston, MA.
- Gordon, N.** (2014, May). *Flipping the classroom*. Presented at the Teaching, Learning, & Innovation Summer Institute, Georgetown University, Washington, DC.
- Haddad, B.** (2015, November). *Panel Discussion: Blended teaching: Faculty voices*. Presented at the edX Global Forum, Washington, DC.
- Haddad, B., Russell, J., Pennestri, S., Demaree, D., Tan, M., & Peshkin, B. N.** (2014, October). *Changing the landscape of genomics education through a Massive Open Online Course (MOOC): Genomic Medicine Gets Personal*. Presented at the American Society of Human Genetics Annual Meeting, San Diego, CA.
- Harbert, B., Levinson, A., Suárez-Quian, C., & Uren, A.** (2014, May). *Panel Discussion: Tablet/mobile computing*. Presented at the Teaching, Learning, & Innovation Summer Institute, Georgetown University, Washington, DC.
- Leow, R.** (2014, October). *Promoting more robust L2 Learning: One psycholinguistic-based CALL sample*. Presented at the Annual Meeting of the Second Language Research Forum (SLRF) Conference, Columbia, SC.
- Leow, R.** (2015, March). *E-tutors, cognitive processes, and L2 development*. Presented at the Annual Meeting of the American Association of Applied Linguistics (AAAL), Toronto, Canada.
- Leow, R.** (2015, April). *Effects of a psycholinguistically-motivated educational video game on L2 learning outcomes and processes: The case of the complex Spanish 'Gustar' constructions*. Presented at the Annual Meeting of Graduate Portuguese and Hispanic Symposium (GRAPHSY) Conference, Washington, DC.
- Leow, R.** (2015, July). *Promoting robust learning in the foreign language classroom*. Presented at the Annual Meeting of the American Association of Teachers of Spanish and Portuguese (AATSP) Conference, Denver, CO.
- Leow, R. & Caras, A.** (2014, May). *Foreign language learning and gaming*. Presented at the Teaching, Learning, & Innovation Summer Institute, Georgetown University, Washington, DC.
- Leow, R., Cerezo, L., & Caras, A.** (2015, July). *Are tasks at all possible in fully online language learning? Introducing talking to Avatars and the Maze Game*. Presented at the Annual Computer-assisted Language Learning (CALL) conference, Universitat Rovira i Virgili, Tarragona, Spain.
- Leow, R., Cerezo, L., & Caras, A.** (2015, July) *Promoting more robust L2 learning: One psycholinguistic-based CALL sample*. Presented at the Annual Meeting of the American Association of Teachers of Spanish and Portuguese (AATSP) conference, Denver, CO.

PUBLICATIONS & PRESENTATIONS (cont.)

- Leow, R., Cerezo, L., & Caras, A.** (2016, April). *CALL in ISLA: Promoting depth of processing of complex L2 Spanish prepositions*. Presented at the Annual Meeting of the American Association of Applied Linguistics (AAAL), Orlando, FL.
- Leow, R., Cerezo, L., & Caras, A.** (2016, September). *CALL in a hybrid curriculum*. Presented at the Annual Meeting of Second Language Research Forum, New York, NY.
- Leow, R., Janssens, P., Gustafson, C., Garr, W., & Caras, A.** (2014, April). *Using CALL for more robust L2 learning: A psycholinguistic approach*. Presented at the Conference on Language, Learning, and Culture, Virginia International University, Fairfax, VA.
- Little, M.** (2015, May). *Teaching bioethics through humanities*. Presentation to the President's Commission on the Study of Bioethics, Washington, DC.
- Lubkin, J. & Screen, A.** (2014, April). *Effectively flipping an ESL grammar class: An action research project*. Presented at the Conference on Language, Learning, and Culture, Virginia International University, Fairfax, VA.
- Maloney, E.** (2014, June). *Experimenting with technology-enhanced learning*. Presented at the edX Global Forum, Delft, The Netherlands.
- Maloney, E.** (2014, October). *Catalyst for change: Experimentation in technology-enhanced learning*. Presented at the University of Texas, Arlington, TX.
- Maloney, E.** (2015, September). *New approaches to technology-enhanced learning*. Presented at EdCrunch 2015, Moscow, Russia.
- Maloney, E.** (2015, September). *Technology-enhanced learning: Silver bullet or challenge to learning*. Presented at EdCrunch 2015, Moscow, Russia.
- Maloney, E.** (2015, September). *The impact of MOOCs*. Presented at HybridEd 2015, Toledo, Spain.
- Maloney, E.** (2016, January). *MyDante: Contemplative reading online*. Presented at the Annual Convention of the Modern Language Association, Austin, TX.
- Maloney, E.** (2016, November). *Creativity and the arts in MOOCs*. Presented at the edX Global Forum, Paris, France.
- Maloney, E., & Ambrosio, F.** (2015, September). *MyDante: Contemplative reading in MOOCs*. Presented at HybridEd 2015, Toledo, Spain.
- Maloney, E., Ambrosio, F., Vovides, Y., Selvanadin, M., Kruse, A., & Gonzalez-Capitel, J.** (2016, October). *Supporting contemplative reading practice online*. Poster presented at Learning with MOOCs III: Being and Learning in a Digital Age, Philadelphia, PA.
- Maloney, E., & Debelius, M.** (2016, February). *New designs in teaching and technology-enhanced learning*. Presented at the 2016 Annual Meeting of the Association of Catholic Colleges and Universities, Washington, DC.
- Martin, S., Pennestri, S., Russell, J., Baynes, B., & Vovides, Y.** (2015, April). *Our migration experience to an online environment: Challenges, processes, outcomes*. Presented at the Emerging Technologies for Online Learning International Symposium, Dallas, TX.
- Maxwell-Paegle, M.** (2015, March). *Engaging learning through cross-cultural tales in the elementary classroom content area: Elementary school/primary education*. Presented at the Teachers of English to Speakers of Other Languages (TESOL) Annual Convention, Toronto, Canada.
- Maxwell-Paegle, M.** (2015, November). *Springboard to writing—visualization of literature*. Poster presented at the National Council of Teachers of English Convention, Atlanta, GA.
- Melucci, D.** (2015, March). *Designing a hybrid format for third semester Italian: Methods and outcomes*. Presented at the American Association for Italian Studies Conference, Boulder, CO.
- Melucci, D. & Hipwell, L.** (2015, November). *Creation of hybrid format for second-year Italian language courses*. Presented at the American Council on the Teaching of Foreign Languages (ACTFL) Annual Convention, San Diego, CA.
- Meyer, O. & Lovett, M.** (2014, July). *Using Carnegie Mellon's Open Learning Initiative (OLI) to support the teaching of introductory statistics: Experiences, assessments, and lessons learned*. Presented at the 9th International Conference on Teaching Statistics, Flagstaff, AZ.
- Meyer, O. & Patel, P.** (2014, July). *Using the Open Learning Initiative (OLI) to support teaching statistics to international politics students*. Presented at the 9th International Conference on Teaching Statistics, Flagstaff, AZ.
- Mulroney S., Whitney, J., & Myers, A.** (2015, March). *Use of a learning management system and related technology to improve physiology classroom teaching*. Presented at Experimental Biology (EB), Boston, MA.
- Myers, A., Mulroney, S., & Stahl, C.** (2014, June). *Technology enhanced learning and flipped classroom exercises in physiology*. Presented at the Center for Innovation and Leadership in Education (CENTILE) Colloquium for Educators in the Health Professions, Georgetown University, Washington, DC.

- Myers, A., Rostain, T., & Smith, L.** (2014, May). *Portable practices across our campuses*. Presented at the Teaching, Learning, & Innovation Summer Institute, Georgetown University, Washington, DC.
- Myers, A., Whitney, J., & Mulroney, S.** (2016, May). *Initial results of using a flipped classroom for the SMP Curriculum: The Georgetown Downtown (GTD) guinea pigs*. Presented at the Center for Innovation and Leadership in Education (CENTILE) Colloquium for Educators in the Health Professions, Georgetown University, Washington DC.
- Myers, A., Whitney, J., Vovides, Y., Pennestri, S., & Mulroney, S.** (2017, March). *Teaching in a flipped classroom within an established medical and graduate curriculum: Evaluation of modalities*. Presented at INTED2017: 11th Annual International Technology, Education and Development Conference, Valencia, Spain.
- Önder, S.** (2016, November). *Turkish language students/Turkish culture students: What can be done in 2016*. Presented at the American Association of Teachers of Turkic Language Conference, Cambridge, MA.
- O'Neil, R., Pongsajapan, R., Schoeninger, A., & Vovides, Y.** (2014, May). *Stories and insights from the Globalization MOOC*. Presented at the Teaching, Learning, & Innovation Summer Institute, Georgetown University, Washington, DC.
- Pankova, M.** (2015, July). *What can the analysis of discourse structure and appraisal choices in online course-based chats by advanced foreign language learners and native speakers tell us about telecollaboration as a venue for intercultural and linguistic learning?* Presented at the International Systemic Functional Congress (ISFC), Aachen, Germany.
- Park, T.** (2015, June). *Improving self-study quizzes with answer feedback designs*. Presented at the Center for Innovation and Leadership in Education (CENTILE) Colloquium for Educators in the Health Professions, Georgetown University, Washington, DC.
- Patterson, R., Tilan, J., & Trester, A.** (2014, May). *Using technology to educate the whole person*. Presented at the Teaching, Learning, & Innovation Summer Institute, Georgetown University, Washington, DC.
- Pennestri, S. & Syverson, E.** (2015, June). *Using simulations to enhance teaching in physician-patient communication*. Presented at the Center for Innovation and Leadership in Education (CENTILE) Colloquium for Educators in the Health Professions, Georgetown University, Washington, DC.
- Riley, J., Olson, T., & Elmendorf, H.** (2015, January). *Panel discussion: How it can be done: Making well-being a core element of institutional purpose*. Presented at the Association of American Colleges and Universities (AAC&U) Annual Meeting, Washington, DC.
- Screen, A. & Lubkin, J.** (2014, March). *Flipping a grammar class: What, why, and how?* Presented at the TESOL International Convention and English Language Expo, Portland, OR.
- Screen, A. & Lubkin, J.** (2015, March). *Teacher and student perspectives on learning in flipped grammar course*. Presented at the TESOL International Convention and English Language Expo, Toronto, Canada.
- Sigman, B.** (2016, November). *Visualization of twitter data in the classroom*. Presented at the Annual Decision Sciences Institute Conference, Austin, TX.
- Sigman, B., Selvanadin, M., Garr, W., Pongsajapan, R., & Bolling, K.** (2014, November). *Teaching how to integrate real time big data analysis and visualization for better decision making*. Presented at the Annual Decision Sciences Institute Conference, Tampa, FL.
- Strachan-Viera, S.** (2016, June). *Videos and their effect on student learning and engagement in a medieval philosophy and a global middle ages history class*. Presented at the International Education Conference sponsored by the Clute Institute, Venice, Italy.
- Syverson, E., Russell, J., & Pennestri, S.** (2014, June). *Using video simulation to enhance physician-patient communication*. Presented at the New Media Consortium Conference, Portland, OR.
- Uren, A.** (2015, June). *Using social media to teach gross anatomy in a large class*. Presented at the Center for Innovation and Leadership in Education (CENTILE) Colloquium for Educators in the Health Professions, Georgetown University, Washington, DC.
- Vovides, Y., McWilliams, M., Pongsajapan, R., Youmans, T., Arthur, P., & Davis, D.** (2015, March). *Examining learners' cognitive presence through linguistic analysis in Massive Open Online Courses (MOOCs)*. Presented at the 5th International Learning Analytics and Knowledge Conference, Poughkeepsie, NY.
- Wardzala, K., & Stephen, E.** (2014, February). *DIVE: A four-step framework for creating meaningful short-term experiences abroad*. Presented at the Workshop on Intercultural Skills Enhancement, Winston-Salem, NC.
- Whitney, J., Myers, A., & Mulroney, S.** (2015, June). *Using self-directed learning (SDL) workshops for flipped classrooms*. Presented at the Center for Innovation and Leadership in Education (CENTILE) Colloquium for Educators in the Health Professions, Georgetown University, Washington, DC.
- Yarden, R., LaRocque, J., & Gusev, Y.** (2015, June). *In-class immersion of 'big data' technologies to improve students' understanding of genomic instability and systems biology*. Presented at the Center for Innovation and Leadership in Education (CENTILE) Colloquium for Educators in the Health Professions, Georgetown University, Washington, DC.

ITEL AWARDEES

Ghayda Al-Ali, Arabic & Islamic Studies
 Frank Ambrosio, Philosophy
 Kelley Anderson, School of Nursing & Health Studies
 Monica Arruda de Almeida, School of Foreign Service
 Tommaso Astarita, History
 Elham Atashi, Justice & Peace Studies
 Marjorie Balzer, Anthropology & CERES
 Anja Banchoff, German
 Shweta Bansal, Biology
 Evan Barba, Communication, Culture & Technology
 Tom Beauchamp, Philosophy
 Andrew Bennett, Government
 Caetlin Benson-Allott, English
 Jan Blancato, School of Medicine
 Roberto Bocci, Art & Art History
 Douglas Boin, Classics
 Rachel Brady, School of Continuing Studies
 Shaun Brinsmade, Biology
 Jonathan Brown, School of Foreign Service
 William Buckley, School of Continuing Studies
 Daniel Byman, School of Foreign Service
 Heidi Byrnes, German
 Donna Cameron, School of Medicine
 Anna Celenza, Performing Arts
 Yulia Chentsova-Dutton, Psychology
 Francisca Cho, Theology
 Francesco Ciabattani, Italian
 Soyica Colbert, Performing Arts
 Susan Coleman, School of Nursing & Health Studies
 Jeff Connor-Linton, Linguistics
 Bernie Cook, American Studies Program
 Jo Ann Moran Cruz, History
 Joe Cunningham, German
 Carl Dahlman, School of Foreign Service
 Diane Davis, School of Nursing & Health Studies
 Ronald Davis, Chemistry
 Maggie Debelius, English
 Anthony DelDonna, Performing Arts
 Thomas DeLeire, McCourt School of Public Policy

Matthew Devost, Computer Science
 Robin Dillon-Merrill, McDonough School of Business
 Veronica Donahue, School of Continuing Studies
 Laura Donohue, Law Center
 Kevin Donovan, School of Medicine
 Friederike Eigler, German
 Nada Eissa, McCourt School of Public Policy
 Heidi Elmendorf, Biology
 Steven Epstein, School of Medicine
 Ladan Eshkevari, School of Medicine
 John Esposito, School of Foreign Service
 C. Christine Fair, School of Foreign Service
 Tina Fallani, Villa Le Balze
 Hany Fazza, School of Foreign Service
 Lioudmila Fedorova, Slavic Languages
 Michael Ferreira, Spanish & Portuguese
 Kevin Fitzgerald, School of Medicine
 Carol Rollie Flynn, McCourt School of Public Policy
 Jennifer Fox, Biology
 Emily Francomano, Spanish & Portuguese
 Jim Freericks, Physics
 Robert Friedland, School of Nursing & Health Studies
 Mary Furlong, School of Medicine
 Karen Gale, School of Medicine
 Ian Gallicano, Biochemistry & Molecular & Cellular Biology
 Alison Games, History
 Alessandro Ghidini, School of Medicine
 Mark Giordano, School of Foreign Service
 John Glavin, English
 David Goldfrank, History
 Nady Golestaneh, School of Medicine
 Nora Gordon, McCourt School of Public Policy
 Yuriy Gusev, School of Medicine
 Bassem Haddad, School of Medicine
 Matt Hamilton, Biology
 Aaron Hanlon, English
 Aviad Haramati, School of Medicine
 Benjamin Harbert, Performing Arts
 Paul Heck, Theology
 Gretchen Henderson, English

Michael Hickey, Biology
 Louise Hipwell, Italian
 Brian Hochman, English
 Bruce Hoffman, School of Foreign Service
 Jeffrey Huang, Biology
 Lily Hughes, Film & Media Studies
 Mike Hull, Physics
 Collier Hyams, Art & Art History
 Jon-Philippe Hyatt, School of Nursing & Health Studies
 Martin Irvine, Communication, Culture & Technology
 Bette Jacobs, School of Nursing & Health Studies
 Yasmin Jilla, School of Medicine
 Irene Jillson, School of Nursing & Health Studies
 Michael Johnson, School of Medicine
 Jessica Jones, School of Medicine
 Timothy Jorgensen, Biology
 Shareen Joshi, School of Foreign Service
 Stacey Kaltman, School of Medicine
 John Keown, Philosophy
 Andreas Kern, McCourt School of Public Policy
 William Kietzman, School of Medicine
 Laurie King, Anthropology
 John Kline, School of Foreign Service
 David Koplow, Law Center
 Lawrence Kromer, School of Medicine
 Rebecca Kukla, Philosophy
 Jan LaRocque, School of Nursing & Health Studies
 Garrison LeMasters, Communication, Culture & Technology
 Ron Leow, Spanish & Portuguese
 Genevieve (Gen) Lester, School of Foreign Service
 Arik Levinson, Economics
 Sherry Linkon, English
 David Lipscomb, English
 Doug Little, School of Nursing & Health Studies
 Maggie Little, Philosophy
 Michael Loadenthal, Justice & Peace Studies
 Toby Long, School of Medicine
 Sue Lorenson, Linguistics

Huaping Lu-Adler, Philosophy
 Jennifer Lubkin-Chavez, Center for Language Education & Development
 Dana Luciano, English
 Rodney Ludema, School of Foreign Service
 Marianne Lyons, School of Nursing & Health Studies
 Mark Maloof, Computer Science
 Maria Marquez, School of Medicine
 Susan Martin, School of Foreign Service
 Monica Maxwell-Paegle, Center for Language Education & Development
 Anna Maria Mayda, School of Foreign Service
 Brian McCabe, Sociology
 Kathleen McNamara, School of Foreign Service
 Jeanne Meck, School of Medicine
 Donatella Melucci, Italian
 Lori Merish, English
 Oded Meyer, Mathematics & Statistics
 David Miller, School of Medicine
 Sarah Miller, Biology
 Fathali Moghaddam, Psychology
 Alex Montero, School of Medicine
 Eileen Moore, School of Medicine
 Theodore Moran, School of Foreign Service
 Yoshiko Mori, East Asian Languages & Cultures
 Susan Mulroney, School of Medicine
 Adam Myers, School of Medicine
 Hiroshi Nakai, School of Medicine
 Lindsay Oldenski, School of Foreign Service
 Motoko Omori, East Asian Languages & Cultures
 Sylvia Önder, Turkish Language & Culture
 Anne O'Neil-Henry, French
 Wayne (JR) Osborn, Communication, Culture & Technology
 Michael Osborne, Art & Art History
 Josiah Osgood, Classics
 Taeyeol Park, School of Medicine
 Parina Patel, School of Foreign Service
 Robert Patterson, English
 Matthew Pavesich, English
 Tiffany Pellathy, School of Medicine
 Beth Peshkin, School of Medicine

Peter Pfeiffer, German
 Rusty Phillips, School of Medicine
 Paul Pillar, School of Foreign Service
 Terrence Potter, Arabic & Islamic Studies
 Madison Powers, Philosophy
 Lamar Reinsch, McCourt School of Public Policy
 Anna Riegel, School of Medicine
 Joan Riley, School of Nursing & Health Studies
 Carol Rogers, Economics
 Jennifer Rogers, School of Medicine
 Mark Rom, McCourt School of Public Policy
 Dean Rosenthal, School of Medicine
 Anne Rosenwald, Biology
 Tanina Rostain, Law Center
 Adam Rothman, History
 Marianna Ryshina-Pankova, German
 Reem Saadeh, School of Medicine
 Farima Sadigh Mostowfi, Persian Program
 Colleen Sanders, School of Nursing & Health Studies
 Milena Santoro, French
 Cristina Sanz, Spanish & Portuguese
 Kumi Sato, East Asian Languages & Cultures
 Pamela Saunders, School of Medicine
 Natalie Schilling, Linguistics
 Cynthia Schneider, School of Foreign Service
 Barbara Schone, McCourt School of Public Policy
 Steven Schwartz, School of Medicine
 Henry Schwarz, English
 Andrew Screen, Center for Language Education & Development
 Milena Shahu, Chemistry
 Karen Shaup, English
 Clay Shields, Computer Science
 Katrin Sieg, School of Foreign Service
 Betsy Sigman, McDonough School of Business
 Lisa Singh, Computer Science
 Francis Slakey, Science in the Public Interest
 Lahra Smith, School of Foreign Service
 Guy Spielmann, French

Lauve Steenhuisen, Theology
 Betsi Stephen, School of Foreign Service
 Robynn Stilwell, Performing Arts
 Karen Stohr, Philosophy
 Lisa Strong, Art & Art History
 Carlos Suárez-Quian, School of Medicine
 Theodore Supalla, School of Medicine
 Jennifer Swift, Chemistry
 Scott Taylor, School of Foreign Service
 Kathryn Temple, English
 Alex Theos, School of Nursing & Health Studies
 Robert Thomas, McDonough School of Business
 Alexander Thurston, African Studies Program
 Jason Tilan, School of Nursing & Health Studies
 Norma Tilden, English
 Anna Trester, Linguistics
 Aykut Üren, School of Medicine
 Ed Van Keuren, Physics
 Sona Vasudevan, School of Medicine
 Bob Veatch, Philosophy
 Patricia Vieira, Spanish & Portuguese
 Myriam Vuckovic, School of Nursing & Health Studies
 Peng Wang, East Asian Languages & Cultures
 Luc Wathieu, McDonough School of Business
 Alissa Webel, French
 Astrid Weigert, German
 Jeffrey Weinfeld, School of Medicine
 Peggy Weissinger, School of Medicine
 Anton Wellstein, School of Medicine
 Vincent Winkler Prins, School of Medicine
 Andria Wisler, Center for Social Justice Research, Teaching & Service
 Barry Wolfe, School of Medicine
 Jian-Young Wu, School of Medicine
 Ronit Yarden, School of Nursing & Health Studies
 Alejandro Yarza, Spanish & Portuguese
 Stefan Zimmers, History
 Sheila Cohen Zimmet, School of Medicine



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