

# The Columbia University Online Learning Opportunity

## University Senate Online Learning Task Force

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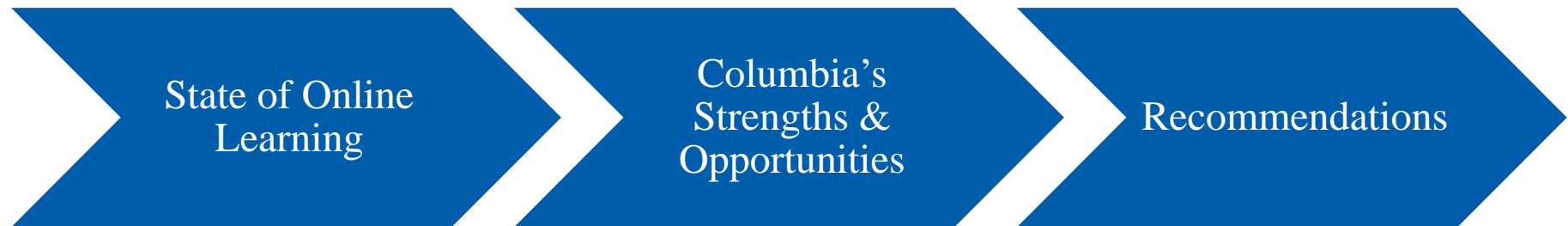
Presentation to Senate Plenary



# Executive Summary

- ◆ Online learning is not new: higher education has a history of delivering content online.
- ◆ Massively Open Online Courses (MOOCs) are a game changer, but are complements and not substitutes to the traditional residential model.
  - Makes traditional content available at low fixed cost and virtually no marginal cost;
  - Provides opportunity for brand expansion and, potentially, revenue generation; and
  - Expands reach to a large and growing audience of life-long learners, e.g. alumni.
- ◆ Columbia's online initiatives could benefit from economies of scale and coordination.
  - Support and decision-making are currently distributed, and sometimes duplicative
    - e.g., CUIT, CCNMTL, Provost's office, individual schools, Continuing Education, etc.
  - Need to prioritize resource allocation to meet the following opportunities:
    - Enhance pedagogy for traditional students, our primary focus;
    - Broaden Columbia's audience (e.g., alumni) through various technology platforms.
- ◆ **For Columbia to best position itself to benefit from this new technology:**
  - Unify, where appropriate, administrative and logistical functions under Provost's purview;
  - Rationalize, consolidate, and invest in activities related to faculty teaching, *e.g., digital RA*
    - Equip classrooms for lecture capture and open studios for high quality content production;
    - Create Center for Teaching Excellence to support traditional classroom pedagogy and train faculty and graduate students to incorporate new technology into the classroom
  - Link online/distance learning with expansion of the Global Centers.

# Outline



# Online learning is not new

Late 90s	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Ad Hoc (Online Courses and Programs)</b>													
<b>Fully Online Programs</b>													
Examples: University of Phoenix, Rio Salado													
<b>School-as-a-Service</b>													
Examples: 2tor, Academia Partnerships, Pearson													
<b>Educational Partnerships</b>													
Examples: Cisco Networking Academy													
<b>Competency-Based Education</b>													
Examples: WGU, StraighterLine, SNHU													
<b>Blended / Hybrid &amp; Flipped Classroom</b>													
<b>Connectivist MOOC</b>													
Example: CCKOS													
<b>Stanford, xMOOC</b>													
Example: MITx, edX, Coursera													

- Higher education has a long history of using distance/online technology to deliver content.
- Columbia is a thought leader: CVN, Continuing Ed, CCNMTL, and efforts like Fathom
- MOOCs are the newest entrants in the field of online learning

# MOOCs, especially those offered by elite peer institutions, are changing the game

- ❑ Emerging model:
  - Massively Open Online Courses (MOOC)
  - Free content and grading; \$30 for certificate of completion
- ❑ Since September 2011:
  - Stanford offers dozens of classes to 1.6 million students
  - Two spinoffs extending to teachers elsewhere: Coursera and edX
  - edX offers a single MIT class to 155,000 students: 6.002 Circuits & Electronics
  - Harvard offers some of its most popular classes including Justice and CS50
  - Georgia Tech is partnering with Udacity to offer a M.S. in CompSci for \$7,000
- ❑ Proprietary sector is consolidating; MOOCs and Standard Learning Management Systems (LMS) are converging:
  - Blackboard has acquired market competition, but its overall market share is down from 2005 as new players enter the market.
  - MOOC-erization of traditional classrooms
    - Canvas – LMS open source platform makes standard courses a MOOC
    - Coursera is partnering with Antioch University to provide course management

# Current major platforms share similar technological capabilities but have very different business models

		<u><i>Coursera</i></u>	<u><i>edX</i></u>	<u><i>Pearson</i></u>	<u><i>Udacity</i></u>
<b>Course Structure</b>	<b>Course Content</b>	Videos, Assignments, Discussion Forums	Videos, Assignments, Discussion Forums	Videos, Assignments, Discussion Forums	Videos, Assignments, Discussion Forums
	<b>Hosting</b>	Cloud	Cloud	Cloud	Cloud
	<b>Voting of questions</b>	Stack Overflow	Stack Overflow	N/A	Stack Overflow
	<b>Multiple-answer</b>	√	√	√	√
	<b>Multiple Choice and Computer Auto-Grading</b>	√	√	–	√
	<b>Instructor-grade</b>	as override	as override	√	as override
	<b>Remote vs. On-campus</b>	Segmentable to different levels of on- and off-campus	Online; based on and in parallel to in-class	Designed for campus-sized class	Varies
<b>Business Model</b>	<b>Principal developer</b>	Collaboration between Coursera and University	Owned by MIT and Harvard, collaboration with other universities	Service provider to universities via software	Seeks to become its own university, hire its own faculty
	<b>Profit vs. Non Profit</b>	For-Profit	Not-for-Profit	For-Profit	For-Profit
	<b>Certificate Fee</b>	Nominal	Nominal	Comparable to traditional course	Less than traditional course but not nominal
<b>Footprint</b>	<b>Courses done and available (+starting)</b>	390	63	130+	25
	<b>Enrollments</b>	3.2 million	675,000	6.7 million	400,000

# New landscape impacts Columbia's classrooms and brand

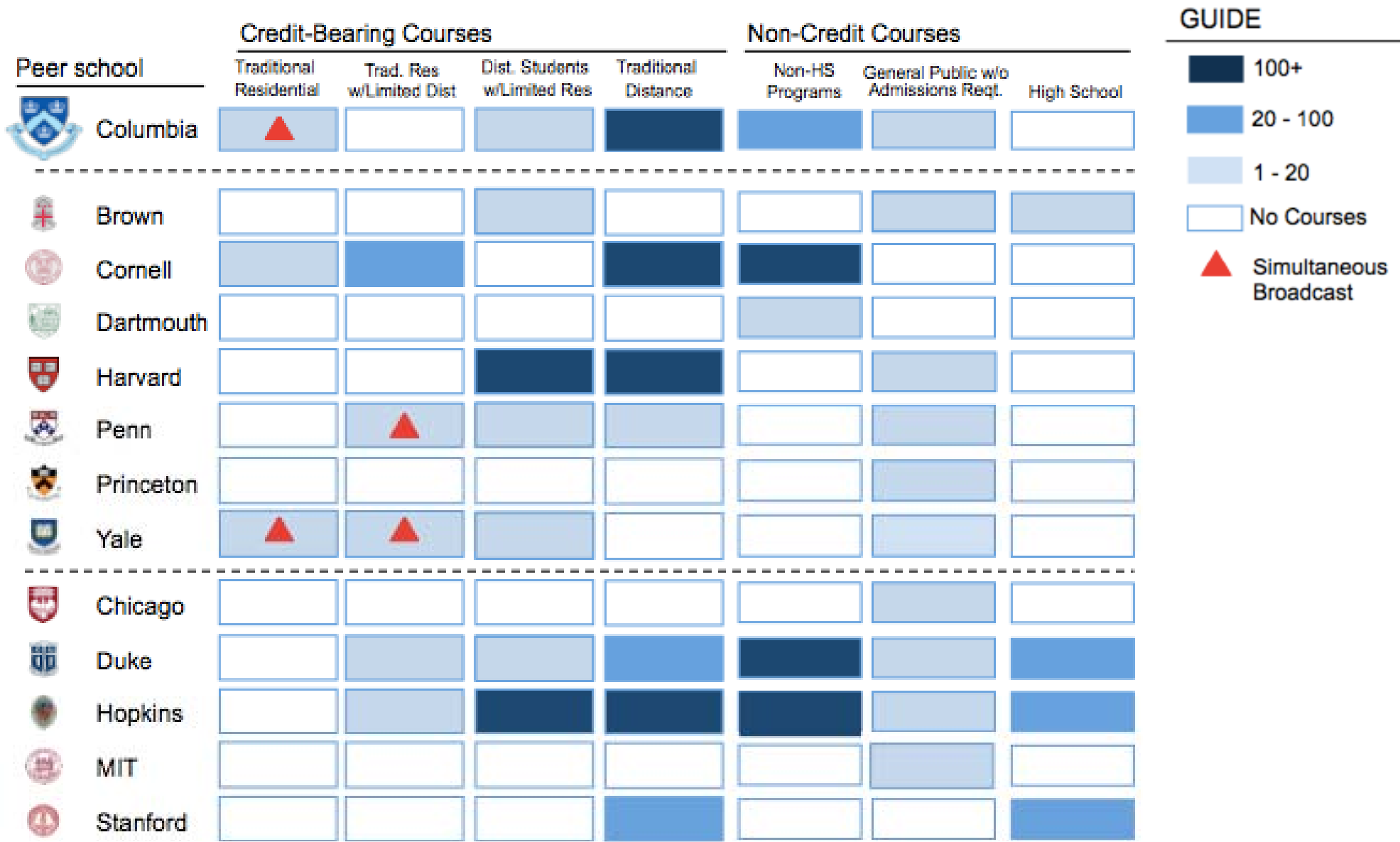
## □ Technological Assets:

- Will support “flipped classroom” model
  - Lecture content will be posted online
  - Classroom experience will stress practical application
- Allows for scalable teaching
  - Flexibility and low overhead

## □ Columbia needs to be in the space to:

- Maintain its brand
  - In good company
  - Non-cannibalizing
- Learn how to compete in a market where content is free, including:
  - Market segmentation (degree vs. non-degree)
  - Tiered pricing
  - Residential vs. non-residential mix

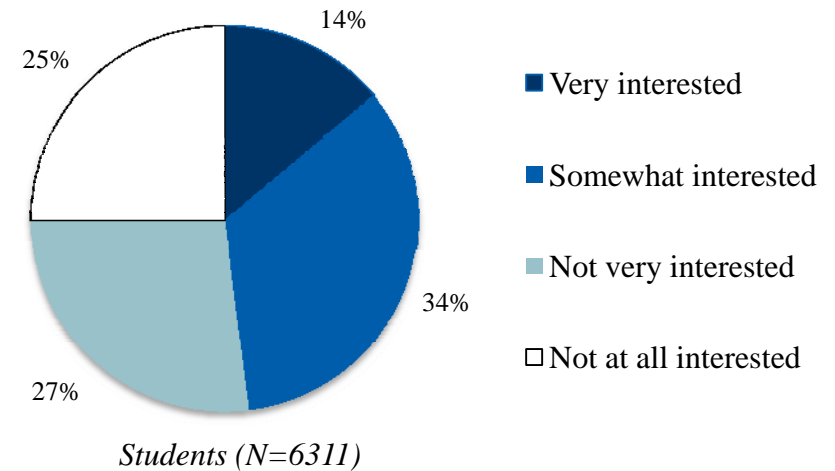
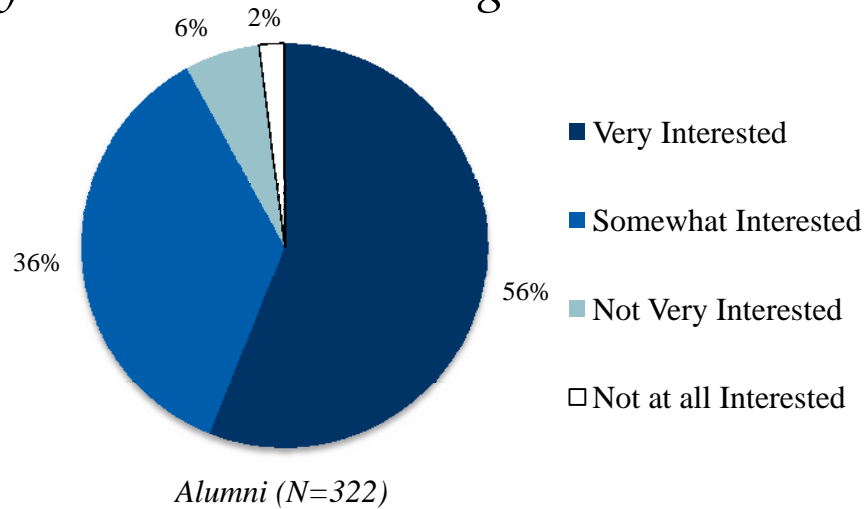
# Columbia compares well to Ivy-plus peers in online learning space but efforts are decentralized



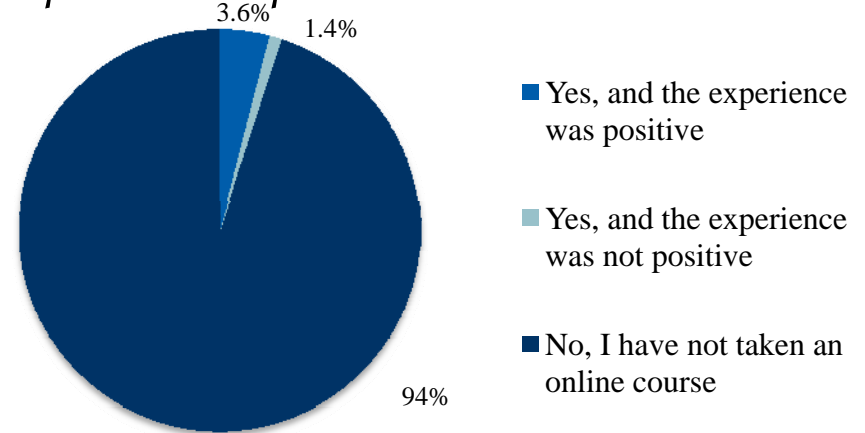
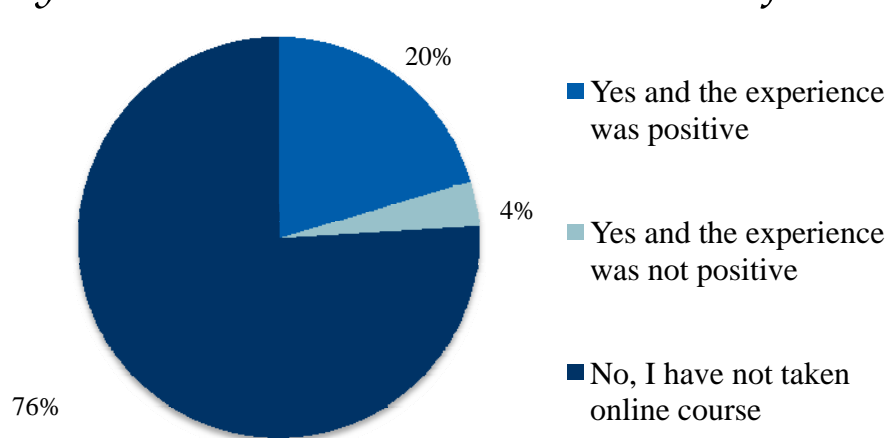
# Demand for online learning among students & alumni is high

- Those who took online courses found them to be a positive experience.
- However, only a few have taken online courses, suggesting an opportunity.

*Are you interested in taking online courses?*



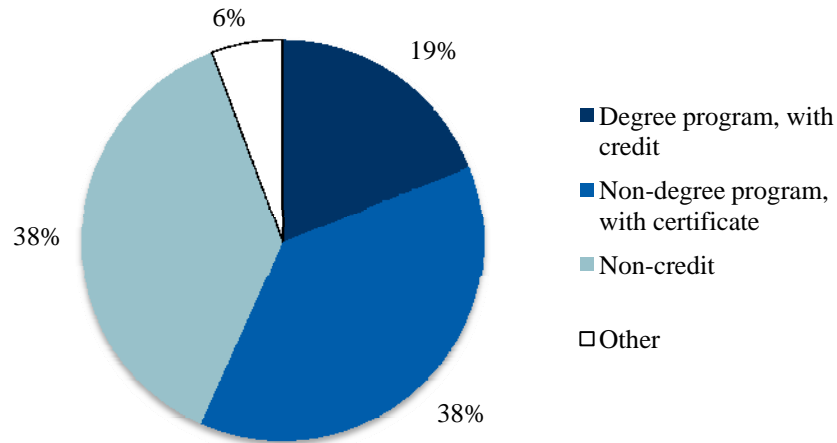
*Have you ever taken an online course before? Was it a positive experience?*



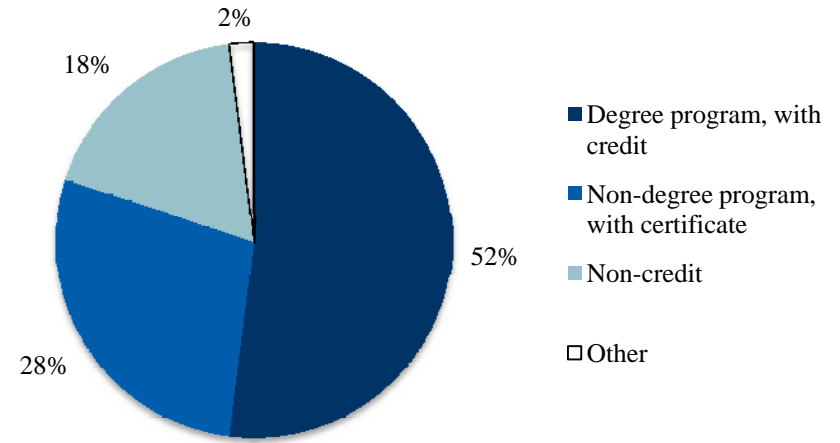
# Alumni & students share similar interests in online course subject matter but differ on interest in for credit/non-credit

❑ Unlike alumni, students prefer a degree program over a non-degree program.

*What kind of University-sponsored Online courses would you be most interested in?*

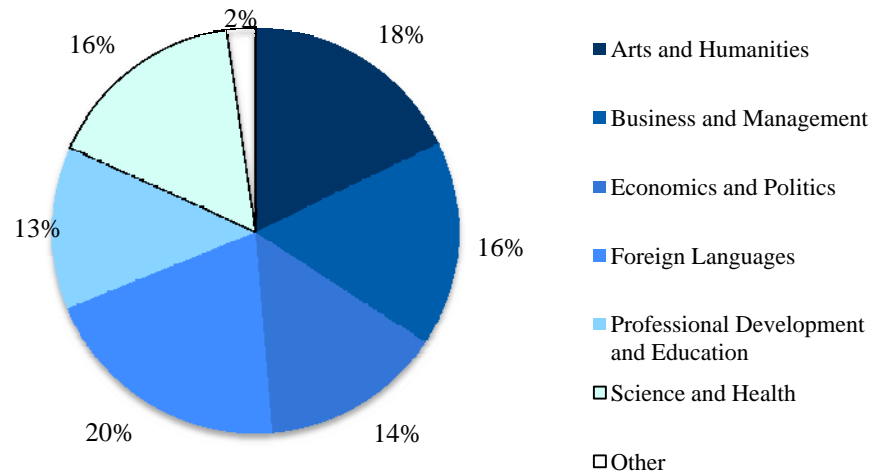
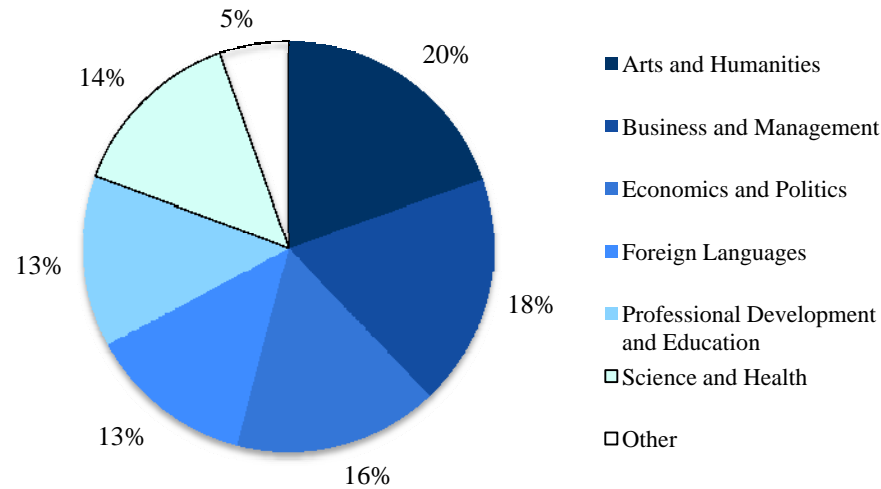


Alumni (N=263)



Students (N=4668)

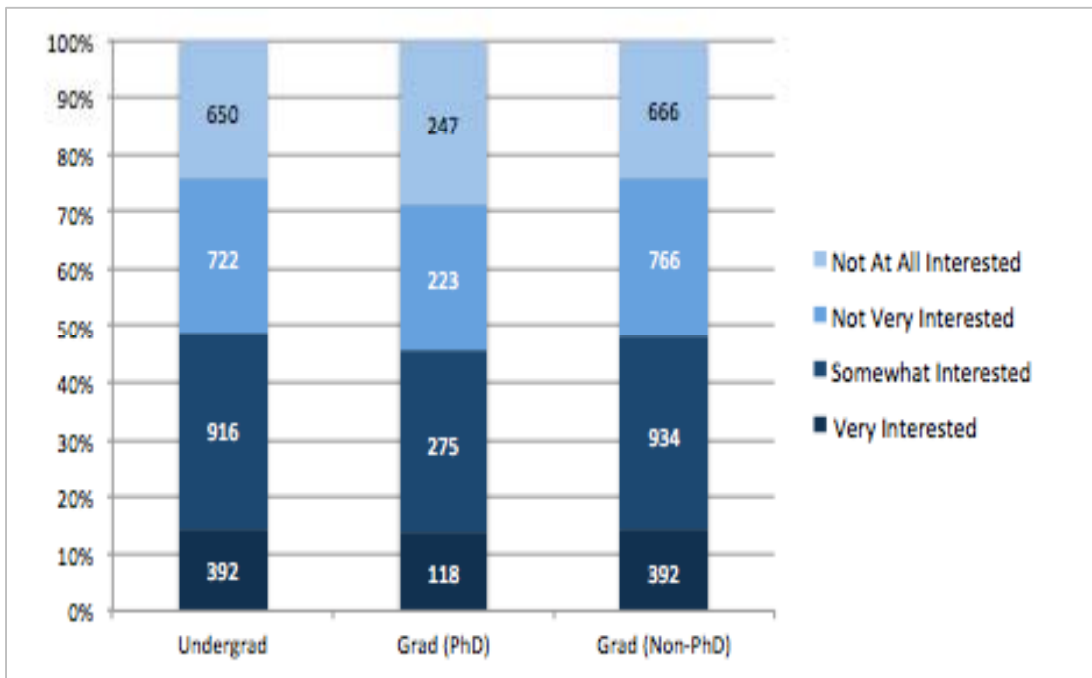
*What subjects of University-sponsored Online courses would you be most interested in taking?*



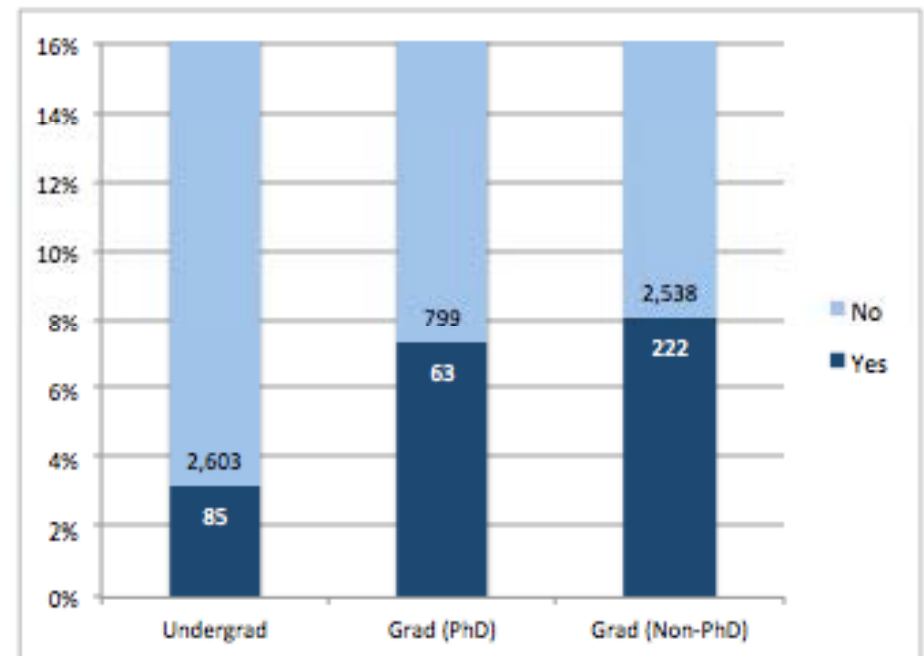
# Student interest in online courses is relatively similar across degree programs

- Undergraduates are less likely to have taken online courses, even though interest in University-sponsored online courses is roughly the same across degree programs.

*Are you interested in taking online courses?*

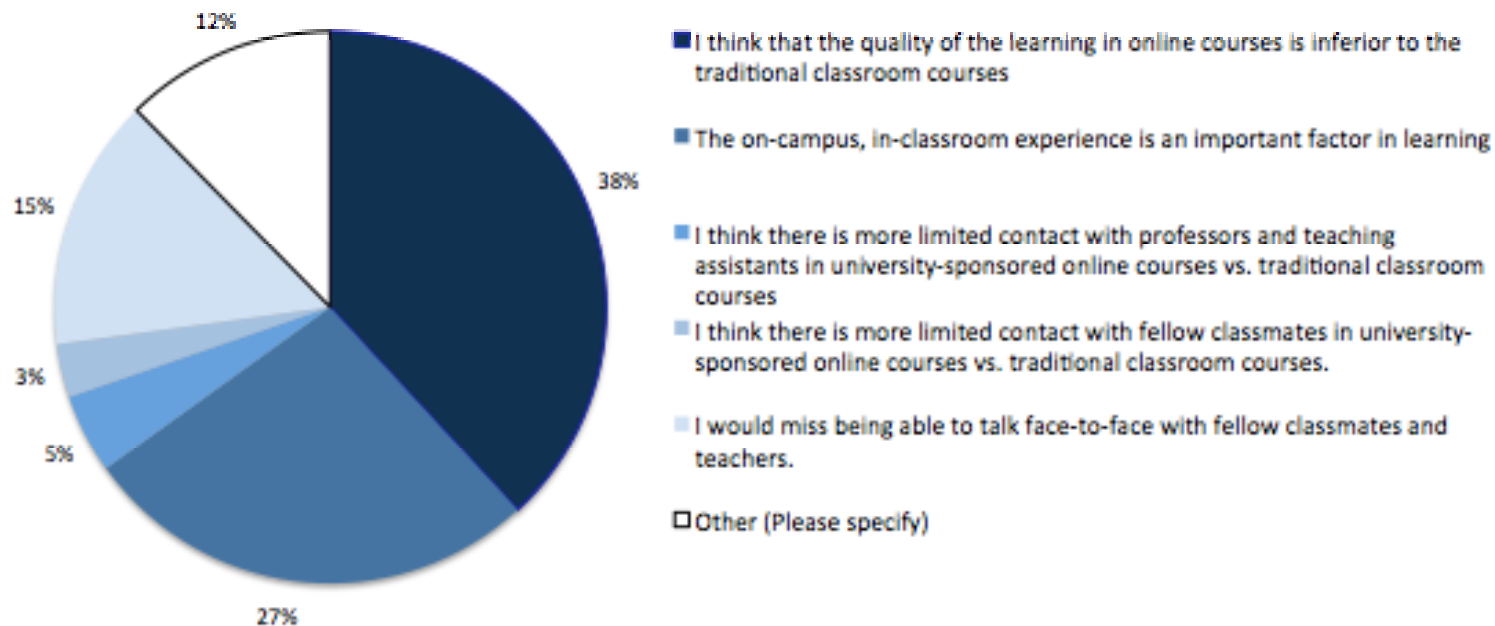


*Have you taken a University-sponsored online course before?*



# Students are most concerned about pedagogy and interested primarily in degree programs

- ❑ Students who expressed disinterest indicated that the most important reason for their lack of enthusiasm was **pedagogical**;
  - They believed that the quality of online learning is inferior to traditional in-class learning (38% of responses).
- ❑ The second most important reason, i.e. that **the on-campus in-classroom experience is important** (27% of responses), echoed the first.

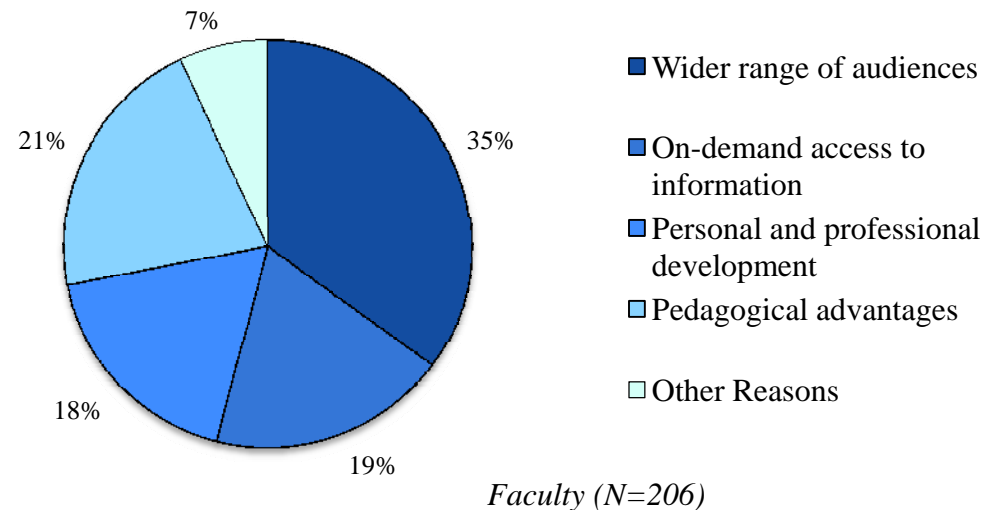


# Supply: Faculty interest in teaching online has been lukewarm thus far

- ❑ For the past 9 years, only one-third of chief academic officers nationwide have reported that their faculty members “accept the value and legitimacy of online education.”
- ❑ In a survey of Columbia faculty, 42% indicated they would be interested in teaching some form of online course.
- ❑ 35%, the largest share of faculty respondents in a survey to Columbia faculty reported “wider range of audiences” as the primary motivation to developing online content.

*What reason is most important for wanting to teach online?*

- ❑ Main reasons why faculty are **not interested**:
  - 1) classroom method is viewed as the best pedagogy for their subject (44%); and
  - 2) need to maintain academic standards (17%).



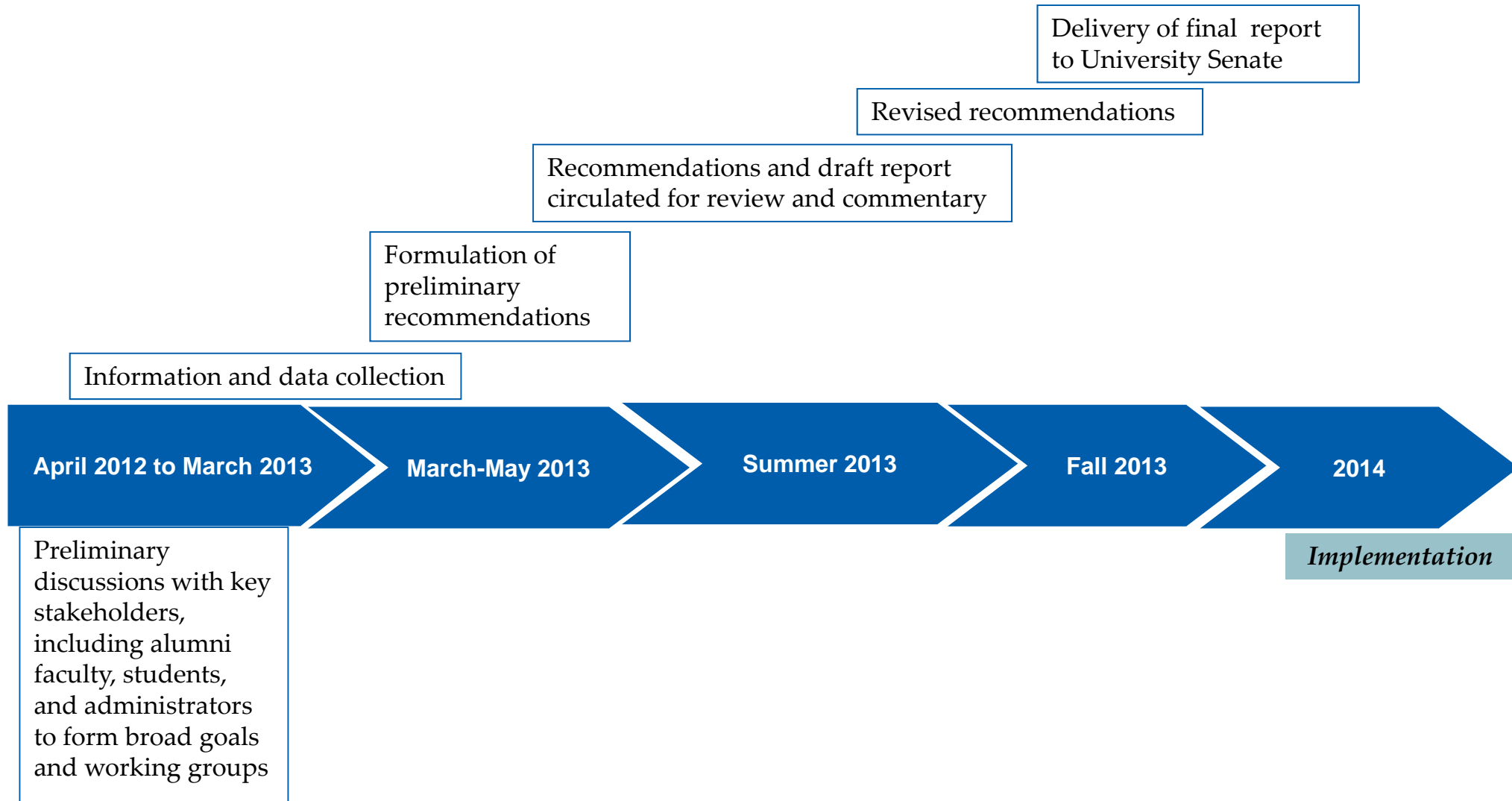
# Best practices to enhance Columbia's position

1. **Focus efforts** on current Columbia students and affiliates
2. **Emphasize content provision** over technology development
  - i.e., we should not develop our own MOOC platform
  - **Avoid lock-in** to current technology
3. **Rationalize and consolidate** core functions, where feasible
  - Cover overhead costs for classroom and technology upgrade to enhance pedagogy for traditional students;
  - Facilitate faculty adoption of new technology in current courses, e.g., digital RA.
4. **Adopt transparent and clear guidelines** for areas of investment.
  - Course offerings to non-traditional students via MOOCs or third parties should highlight current strengths and reasonably cover development costs.
5. **Foster university-wide faculty governance** by incorporating existing decision making bodies.
  - e.g., include representatives from the Senate Online Learning and Education committees.

# Next steps build on strengths and expand reach

- ❑ Expand capacity to develop online course content
  - Create Center for Teaching Excellence to facilitate faculty adoption of new technology and share learning across the university.
  - Build technology studios and infrastructure to support units.
  - Archive and manage content to be repurposed across courses
- ❑ Develop interim Coursera/edX pilot courses
  - Faculty can adopt a flipped-classroom model, leveraging technological capabilities to enhance pedagogy for on-campus students.
  - Schools can package content for degree students, either in purely online or hybrid programs.
  - Revenue generated should cover development costs
- ❑ Encourage link between Global Centers and various distance/online learning programs
  - Bundle online content to meet needs of Global Centers' constituencies
  - Expands Columbia's reach to new audiences and donor base

# Proposed Timeline



# Appendix: Senate Online Learning Task Force

- ❑ Senate Online Learning Task Force
  - University-wide group, including faculty, students, alumni and administrators from SCE, A&S, and Professional Schools
  - Senate approves all new online/hybrid programs
  - Wrote the Fathom report in 2002
  
- ❑ Focusing on three central themes:
  - Pedagogy
  - Technology
  - Audience
  
- ❑ Deliverable:
  - Report identifying Columbia's key strategic opportunities and challenges in the emerging online learning space

# Appendix: Roster of Online Learning Task Force

- Adam Cannon, Computer Science
- Sen. Akshay Shah, Student, SEAS
- Sen. Anjelica Kelly, Columbia Business School
- Assaf Zeevi, Columbia Business School
- Sen. Cleo Abram, Columbia College
- Sen. K. Daniel Libby, Senate Alumni Relations
- David Madigan, Statistics
- Dennis Tenen, English & Comparative Literature
- Donald Davis, Economics
- Eitan Grinspun, Computer Science
- Ellen Meier, Teachers College
- George Hripcsak, Biomedical Informatics
- Sen. Gerald Sherwin, Senate Alumni Relations
- Sen. James Applegate, Astronomy, Physics
- Kristine Billmyer, Continuing Education
- Sen. Letty Moss-Salentijn, Dental Medicine
- Maneesha Aggarwal, Information Technology
- Sen. Matthew Chou, Columbia College
- Maurice Matiz, CCNMTL
- Sen. Philip Stephenson, Journalism
- Sen. Richard Sun, Columbia College
- Sen. Selim Lika, Continuing Education
- Sen. Sharyn O'Halloran, Political Science, SIPA
- Sen. Soulaymane Kachani, Industrial Engineering
- Sree Sreenivasan, Journalism
- Marni Stein, Continuing Education

# Appendix: Comparison Chart Definitions

## **Credit Bearing Programs:**

- Traditional Residential: Students “in residence”; full or part-time students who physically attend courses at the University’s campus. These students include commuter students who attend courses.
- Traditional Residential w/Limited Distance: Traditional residential students who are temporarily away from campus, for instance study abroad, or between semesters (winter and summer break)
- Distance Students w/Limited Residency: Traditional distance students who have a short-term residency requirements (e.g. a two week intro or final project at the start or end of a semester; eMBA).
- Traditional Distance: Students who receive instruction exclusively outside of the traditional classroom setting through online, mail or other platforms.

## **Non-Credit/Certificate Programs (Courses that do not result in awarding of academic credit towards a degree):**

- Non-HS Certificate Programs: Programs that result with the awarding of a certificate, taught at the post-secondary level with some sort of application process, even if admission is de-facto guaranteed.
- General Public w/o Admissions Requirement: Courses available online to anyone; no application necessary
- High School: Courses geared towards HS students with or without an admissions requirement

## **Method of Delivery:**

- Synchronous: Courses that are delivered in real-time. Live interaction between instructors and students, can be both lecture-based (students all watch lecture at the same time, and professors respond to audience reaction), or seminar based (live discussion with students and preceptors)
- Asynchronous: Course materials and assignments posted online. Students are able to move at their own pace but still have general deadlines and are able to ask questions to instructors and TAs.
- Course Materials Posted Online: Lecture Videos, Slides, and Assignments posted online but there is no deadline or mechanism for the submission of course materials or ask questions.
- None: The University does not offer online course content to this audience.