California is falling behind

Percentage of adults with at least a bachelor's degree

Source: OECD 2011, based on tertiary type-a degrees; 2010 ACS for California
72.0% Growth Since 2000, 5.6% annually

14.7% Decline Since 2000, 1.6% annually

- Average Tuition and Fees at Public, Four-Year
- Average Earnings for Full-Time Workers Aged 25–34 with Bachelor’s Degree Only
Tectonic Shifts Shaping Current Realities

- More cell phones than tooth brushes
- 76% having access to electricity, but 81% to mobile devices
- From scarcity of knowledge to unimaginable abundance
- 10 billion devices connected
Redefining Citizenship in a hyper-connected World

- Active participation in dialogue
- Quickly self-organizing systems
- The Acceleration of innovation as a driving strategy
- The role of IT from an enabler to transforming culture
The Need for Transformation

- Trail blazers and benchmarkers
- Developing the ambidexterity
- Altering the DNA & modifying the genetic code of H.E.
- Form Problem Solving to imagining new possibilities
Technology’s Move to Regularize Architecture

- Internet platform (Amazon)
- People platform (Facebook)
- Tablet platform (Apple)
- Information platform (Google)
- Mobile as the platform of computational computers
New Opportunities

- World with 6B mobile devices and 1B smart phones
- In Facebook 2.5 B items are shared, 2.7 B likes, & 300 M photos are uploaded per day
- The Development of Massive Open Online Courses (MOOCs)
- The Internet of Everything (IOE) with $14.4 Trillion economic opportunity
Something New in Shock-thriller Education

EdUCKA presents An Infinite Scale Production

MOOC HYSTERIA

starring
Stanford University
University of Virginia

<Insert your institution here>

Produced by Daphne Koller
Directed by Sebastian Thrun
The term, MOOC allegedly first appeared in *Inside Higher Ed* in December 2011, in reference to a course offered by a Stanford University professor. The *New York Times* declared 2012 to be “the Year of the MOOC”.

**Massive Open Online Course**
MOOCs:

edx: Harvard-MIT (Anant Agrawal), $60M, Dec 2011
+18 partners, over +24 courses, +1 M students https://www.edx.org/

Udacity: Ex-Stanford (Sebastian Thrun), Feb 2012
https://www.udacity.com/
$15.3 M, +20 courses
400,000 students

Coursera: Stanford (Daphne Koller, Andrew Ng)
April 2012, $16 M VC, 33 universities, +200 courses, +2.5 M student from 196 countries, Feb 2013  https://www.coursera.org/
SJSU’s edX Flipped/Blended Model

Fall 2012: Pilot flipped/blended 1 section of SJSU (EE98), using MIT edX’s first MOOC course, edX 6.002x.

- **Outside class**: edX online content
  - Watch edX MIT 6.002x video lectures
  - Complete work on other online features (quizzes, labs, textbook)

- **In class**: small group work + group/individual quizzes, Instructor answers questions in the first 15 min; group work and group/individual tests for remaining 60 min.

From left to right:
1. Professor Khosrow Ghadiri
2. Dr. Ping Hsu
3. Dr. Anant Agarwal (President, edX)
4. Behnam Behziz (Grad TA student)
5. Dr. David Parent
edX Prelim Results

Section 2 (in red) = edX pilot
(NOTE: Data is preliminary)

Average: 50.4%, SD: 27.1%
41% = retake ➔ 59% passed

Fall 2012 (edX pilot)
Average: 60.0%, SD: 15%
10% = retake ➔ 91% passed

NEW:
- SJSU-edX Center for Excellence in Adaptive and Online Learning
- 9 other CSUs this July
- Expand other edX courses
- Publish/disseminate data
SJSU and MIT edX Collaboration

Electrical Engineering 98: Circuits and Electronics Course
(5 online components = short videos, quizzes, virtual lab, textbook, office hours)

Anant Agrawal, President edX

Lt. Governor Gavin Newsome
President Mo Qayoumi
# Preliminary Outcomes & Caveats

Results: Table below represents students who earned a C or better.

<table>
<thead>
<tr>
<th>Course</th>
<th>Spring Pilot 2013</th>
<th>Summer Pilot 2013</th>
<th>SJSU On-Campus (based on past 6 semesters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Statistics</td>
<td>50.5%</td>
<td>83.0%</td>
<td>76.3%</td>
</tr>
<tr>
<td>College Algebra</td>
<td>25.4%</td>
<td>72.6%</td>
<td>64.7%</td>
</tr>
<tr>
<td>Entry Level Math</td>
<td>23.8%</td>
<td>29.8%</td>
<td>45.5%</td>
</tr>
<tr>
<td>General Psychology</td>
<td>not offered</td>
<td>67.3%</td>
<td>83.0%</td>
</tr>
<tr>
<td>Intro to Programming</td>
<td>not offered</td>
<td>70.4%</td>
<td>67.6%</td>
</tr>
</tbody>
</table>
### Student Enrollments (exclude W/Drop)

#### Spring 2013
- **Developmental Math**: 84 (SJSU=47)
- **Introductory Algebra**: 63 (SJSU=16)
- **Intro to Statistics**: 81 (SJSU=36)

**Total**: 228 (SJSU=99) 43%

#### Summer 2013
- **Developmental Math**: 84 (SJSU=21)
- **Introductory Algebra**: 95 (SJSU=26)
- **Intro to Statistics**: 312 (SJSU=51)
- **Intro to Computer Programming**: 449 (SJSU=44)
- **Intro to Psychology**: 321 (SJSU=87)

**Total**: 1,261 (SJSU=229) 18%

**MOOC Free Enrollment Total = 94,000**
CAMPUS TECHNOLOGY INNOVATORS AWARDS 2013

2013 Innovators

By Meg Lloyd, David Raths, and Kanoe Namahoe

CONGRATULATIONS TO our 2013 Campus Technology Innovators! Out of a total of 235 entries, nine honorees rose to the top in six categories: Education Futurists; Teaching and Learning; IT Infrastructure and Systems; Student Systems and Services; Leadership, Governance, and Policy; and Administrative Systems. These IT leaders have found innovative ways to tackle tech challenges large and small, and really make a difference on their campuses. Worthy of recognition, too, are the vendors and products that help make these projects a reality.

Our thanks to the members of our Innovators Judging Committee (see “Meet the Judges,” page 46), as well as all who submitted nominations this year.

We are especially pleased that CT’s digital format allows us to share videos, slideshows, and links to Innovator-related resources. Read on and enjoy!

SISU’S MOOC INNOVATORS (left to right): Khosrow Ghadiri, Sandra DeSouza, Ellen Juhn, Ronald Rogers, and Julie Silva Spitzer.
New Technologies
Massive scale online collaboration

Type the two words:

overlooks
inquiry
A New Learning Ecosystem

- From disengaged individuals to extreme learners
- From assigning H.W. to enticing with content
- From lecture halls to collaboratoria
- From grades to continuous feedback
Opportunities in New Technologies

- Roman Numbers vs. Indian numbers

- “You see things; and you say, Why?’ But I dream things that never were; and I say, Why not?’”
  —George Bernard Shaw

- “If everything seems under control, you are not going fast enough.” Mario Andretti
Closing Remarks

Let's utilize technology as a weapon of mass instruction!
Thank You!