

# Responding to the changing landscape: The Innovative Learning Institute

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Jeremy Haefner, Provost  
August 2012

June 20, 2012, 4:14 pm

## Online Degree Program Lets Students Test Already Know

By Angela Chen

The University of Wisconsin plans to start a “flexible de... allowing undergraduates to test out of material they have mastered.

March 21, 2012 - 3:00am

By Steve Kolowich

## Free Courses, Elite Colleges

January 27, 2012 - 3:00am

Through a new company, professors at Dartmouth, Duke, Stanford, UVA and other high-profile institutions are making their courses available online free.

actor

## Massive Courses, Sans Stanford

January 24, 2012 - 3:00am

# UVa Board Members' E-Mails Reflect Worry About Online Education

Elite Un

## Advancing the Open Front

April 18, 2012 -

December 20, 2011 - 3:00am

By Steve Kolo

MIT's new open course initiative may shake the foundations of the higher ed credentialing system.

Cs and Machines

112 - 3:00am

Kolowich

Confli

## Gates Foundation Gives \$9-Million in Grants to Support 'Breakthrough' Education Models

June 21, 2

June 19, 2012,

June 21, 2012, 3:33 pm

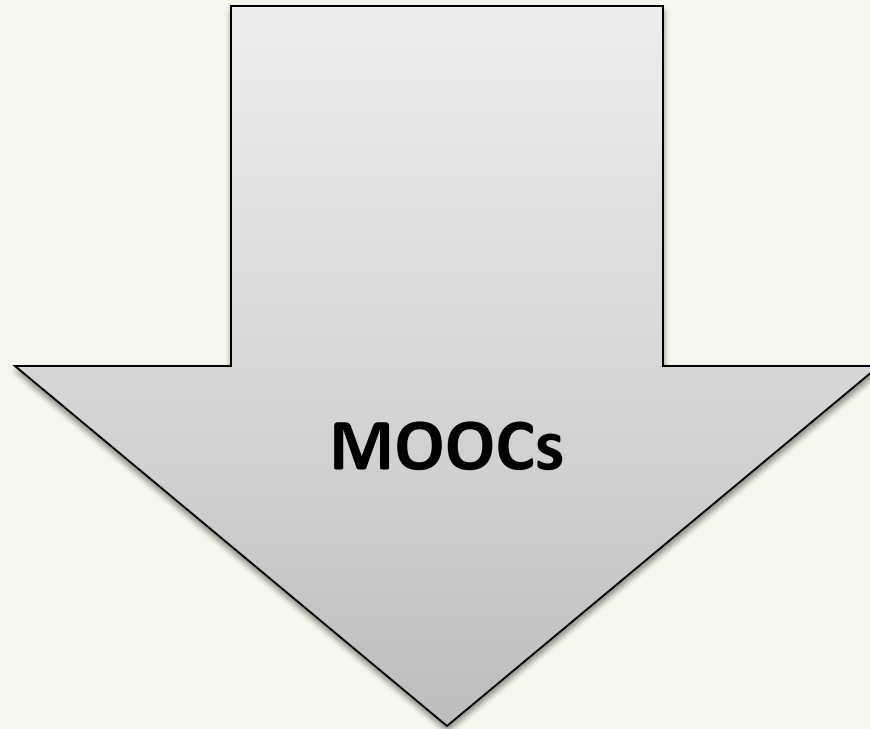
By Jeffrev R

## Department of Energy Creates Online-Learning Platform for Technical Training

By Angela Chen

The massive online movement  
Systemic course transformation  
The new (non-traditional) student

# **THREE CHALLENGES FROM THE CHANGING LANDSCAPE**



# **Massive open online course movement**

# Opening the Floodgates

*Sebastian Thrun's Massive Open Online Course (MOOC) Goes Viral*

## Two Fashionable Brands

*Celebrity Faculty*



Dr. Sebastian Thrun  
*Stanford Professor*



*Cutting-Edge  
Corporation*

Google™



## One Hot Global Topic

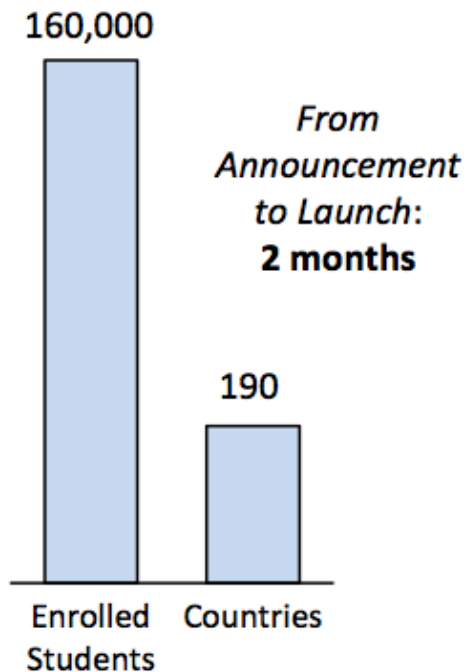
INTRODUCTION TO  
**Artificial Intelligence**

### *Topics Covered*

- Knowledge Representation
- Inference
- Machine Learning
- Planning and Game Playing
- Information Retrieval
- Computer Vision
- Robotics



## Truly Amazing Uptake



## A Tipping Point?

*Six Elite Universities Join the MOOC Movement in Less Than a Year*

### July 2011

Thrun and Norvig announce that their Stanford AI course will be open to anyone

### January 2012

Two Stanford professors found Coursera; Venture capital firms invest \$16 M

### May 2012

MIT and Harvard announce "edX" – free online courses and certificates

### March 2011

Thrun sees Salman Khan speak at TED

### December 2011

MIT announces "MITx"

Thrun gets venture capital to create Udacity

### April 2012

Coursera announces partnerships with Princeton, U Penn, and U Michigan; Plans to offer 30 courses by summer (including humanities)

### No Going Back for Thrun

"Having done this, I can't teach at Stanford again. It's impossible. There's a red pill and a blue pill and you can take the blue pill and go back to your classroom and lecture your 20 students. But I've taken the red pill and seen Wonderland."

*Sebastian Thrun*

### ...Or for Higher Education?

"In 50 years, there will be only 10 institutions in the world delivering higher education and Udacity has a shot at being one of them."

*Sebastian Thrun*

THE CHRONICLE  
of Higher Education

Monday, August 20, 2012

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## What You Need to Know About MOOC's

Call it the year of the mega-class.

Colleges and professors have rushed to try a new form of online teaching known as MOOC's—short for "massive open online courses." The courses raise questions about the future of teaching, the value of a degree, and the effect technology will have on how colleges operate. Struggling to make sense of it all? On this page you'll find highlights from *The Chronicle's* coverage of MOOC's.

### What are MOOC's?

MOOC's are classes that are taught online to large numbers of students, with minimal involvement by professors. Typically, students watch short video lectures and complete assignments that are graded either by machines or by other students. That way a lone professor can support a class with hundreds of thousands of participants.

### Why all the hype?

Advocates of MOOC's have big ambitions, and that makes some college leaders nervous. Their...

EXPAND ALL COLLAPSE ALL NEWEST FIRST OLDEST FIRST

2012

- Aug 16 Students Socialize in Study Groups
- Aug 16 Plagiarism Reported in Coursera
- Aug 13 Commentary: Why Online Education Won't Replace College—Yet
- Aug 10 Coursera Reaches 1 Million Students
- Jul 28 Why Do Students Flock to MOOC's?
- Jul 28 Coursera's 'Massive Open Cookout'
- Jul 24 Berkeley Joins edX
- Jul 19 Inside the Coursera Contract

courses from some of the world's most exclusive universities. Of course, we still don't know how much the courses will change the education landscape, and there are plenty of skeptics.

### These are like OpenCourseWare projects, right?

Sort of. More than a decade ago, the Massachusetts Institute of Technology started a much-touted project called OpenCourseWare, to make all of its course materials available free online. But most of those are text-only, lecture notes and the like. Several colleges now offer a few free courses in this way, but they typically haven't offered assignments or any way for people who follow along to prove that they've mastered the concepts. MOOC's attempt to add those elements.

### So if you take tests, do you get credit?

So far there aren't any colleges that offer credit for their MOOC's. But some MOOC participants can buy or receive certificates confirming their understanding of the material.

### Who are the major players?

Several start-up companies are working with universities and professors to offer MOOC's. Meanwhile, some colleges are starting their own efforts, and some individual professors are offering their courses to the world. Right now four names are the ones to know:

#### edX

A nonprofit effort run jointly by MIT, Harvard, and Berkeley.

Leaders of the group say they intend to slowly add other university partners over time. edX plans to freely give away the software platform it is building to offer the free courses, so that anyone can use it to run MOOC's.

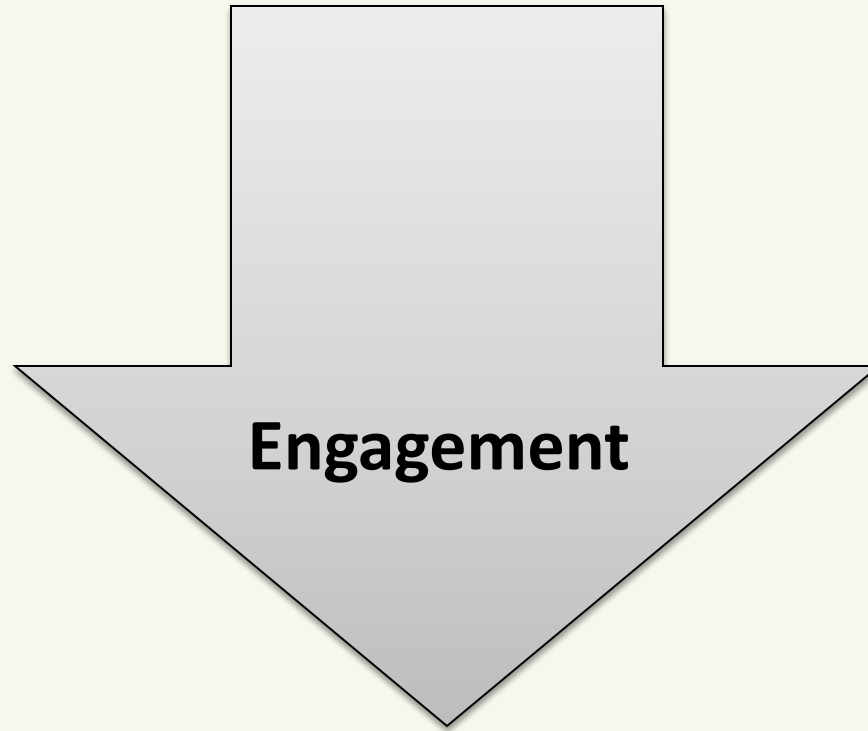
#### Coursera

A for-profit company founded by two computer-science professors from Stanford.

The company's model is to sign contracts with colleges that agree to use the platform to offer free courses and to get a percentage of any revenue. More than a dozen high-profile institutions, including Princeton and the U.

- Jul 11 Commentary: Plenty of Promise, but No Panacea
- Jul 6 Commentary: What's the Matter with MOOC's?
- Jun 25 Video: Bill Gates on MOOC's
- Jun 15 Where Students Do the Teaching—and the Learning
- Jun 11 4 Profs Tell Us How They Lead MOOC's
- May 19 Commentary: What's the MOOC Business Plan?
- May 16 MIT Names Online-Education Guru as New President
- May 11 Purdue Kicks Off Global Online-Education Project
- May 2 Harvard and MIT Partner in Online Courses
- Mar 29 Professor Hopes to Support Free Course With Kickstarter
- Mar 6 Two Weeks With Udacity
- Feb 10 Four Start-Ups Offer Free Online Courses
- Jan 23 Professor Leaves Stanford to Create Online Start-Up
- Jan 5 'Badges' Challenge Traditional Diplomas

2011



# **Substantial course transformation**



# Inactive Learning, in Person and Online

*Few Benefits from Static Content Delivery*

## "Sage on the Stage"



- 1-2 hours of lecture
- No way to "rewind"
- Physical constraints of classroom
- Students play passive role

*Less Engaging*

Lecture

Reading

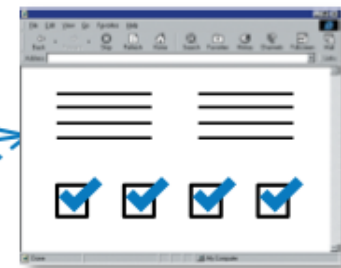
Group Discussion

Practice / Projects

Teaching Others

*More Engaging*

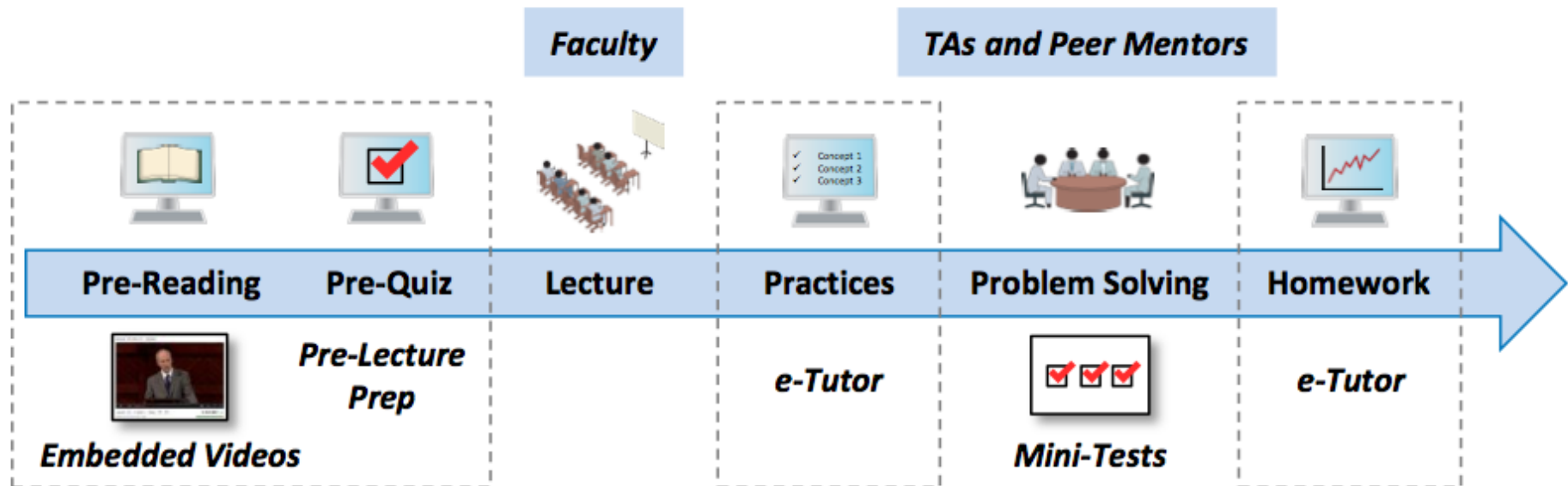
## Generic Online Course



- Readings and homework posted online
- No forum for interaction
- Email correspondence
- No additional value from technology

# Winning on All Fronts with Course Redesign

*Alternative Model Expands Capacity, Improves Quality, and Costs Less*



**12%** Reduction in  
DFW rate

**45%** Increase in  
enrollment cap

**31%** Cost savings  
per student

## Few Excuses Left

### *Course Redesign Gaining Traction Across Institutional Types and Disciplines*

"I always thought I was a pretty good lecturer, but ... I had come to a realization that even my most successful students weren't retaining a lot of the material I'd covered from one course to the next."

*Elizabeth Alexander  
Texas Wesleyan History Professor*



#### Physics

- Clickers and frequent feedback opportunities keep students on track
- Students grouped based on answers to questions



#### English

- From 3 hours to 1 hour in class per week
- Additional time spent in one-on-one sessions, peer tutoring, and multimedia lessons



#### History

- Historical Methods class won "Radically Flexible Classroom" award
- Movable furniture and tech-enabled classrooms facilitate group work

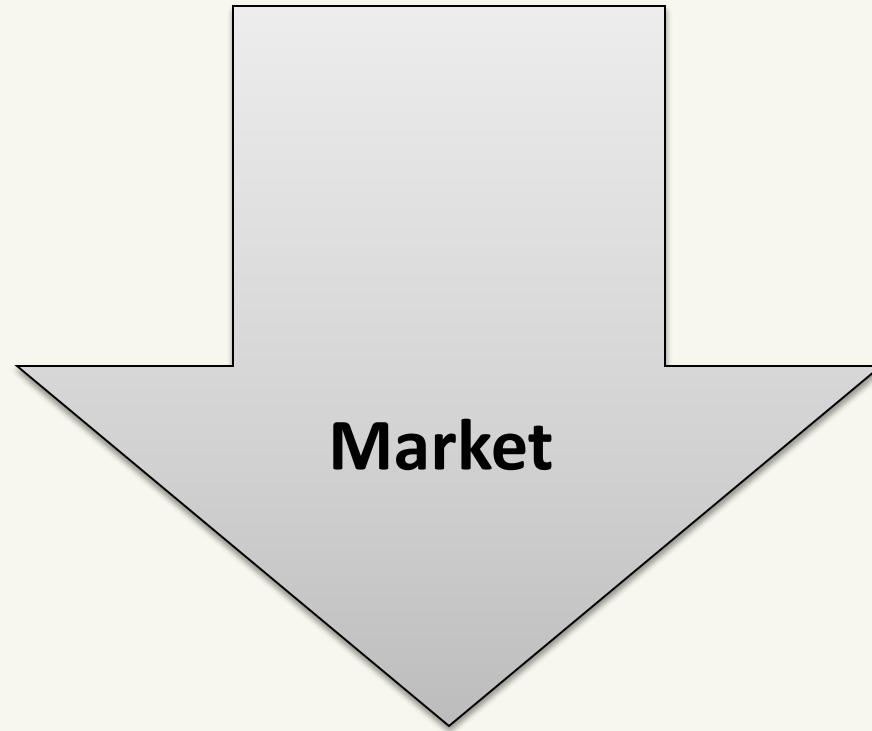


#### Math

- Emporium model: 1 hour in class, 2 hours in large computer lab
- Significantly improved completion and retention rates
- 19% instructional cost savings

"Do our students actually *learn* during class, or do they simply feverishly scribble down everything we say, hoping somehow to understand the material later?"

*Eric Mazur  
Harvard Physics Professor*

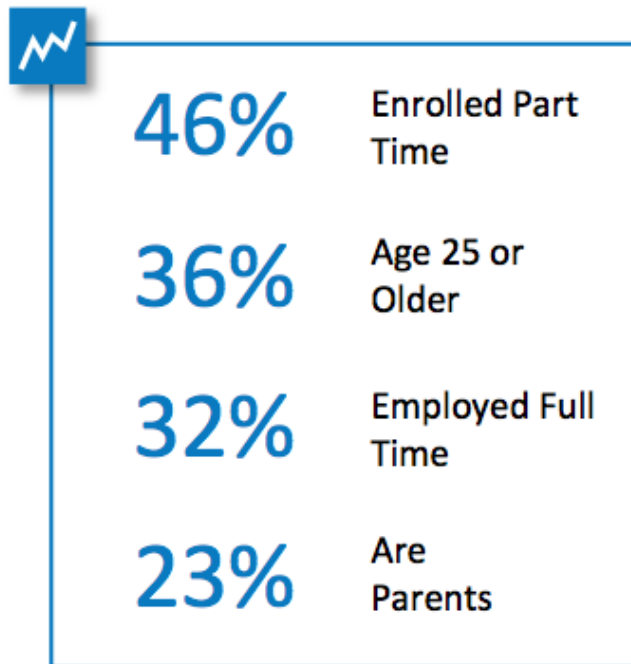


**New  
(non-traditional)  
student**

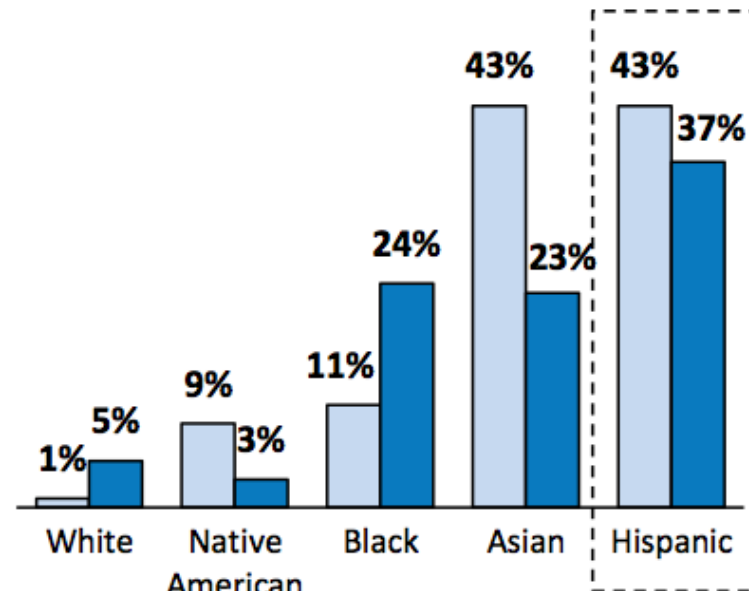
# The Non-Traditional Majority

*Full-Time Residential 18- to 22-Year-Olds a Declining Share*

## Significant Percentage of Undergraduates Now Non-Traditional



## Hispanic Population and Enrollment Growing Rapidly



□ US Population Growth Rate, 2000-2010

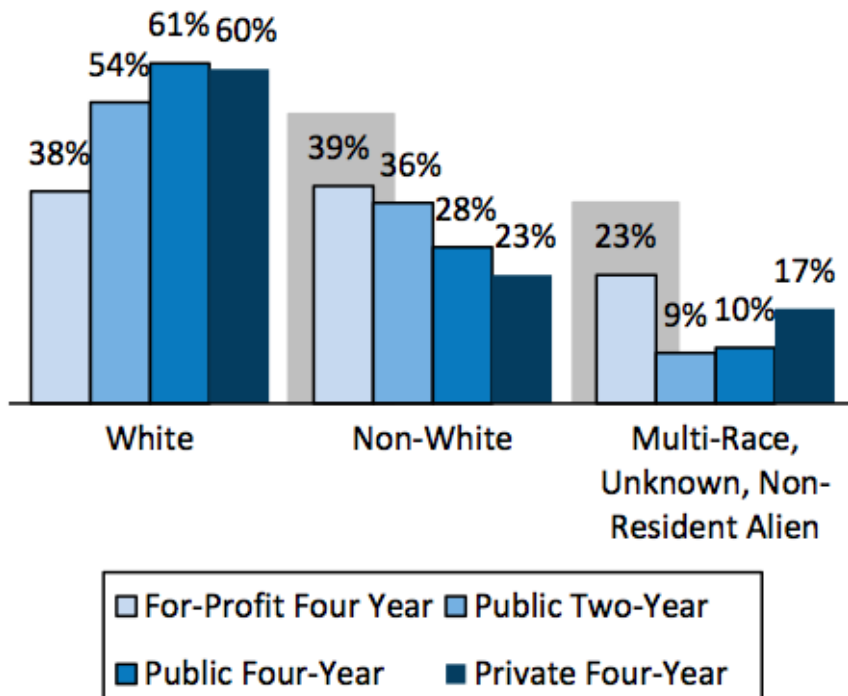
■ Projected College Enrollment Growth Rate, 2011-2019

# Targeting the Non-Consumers

*For-Profit Universities Serve Traditionally Non-College-Going Populations*

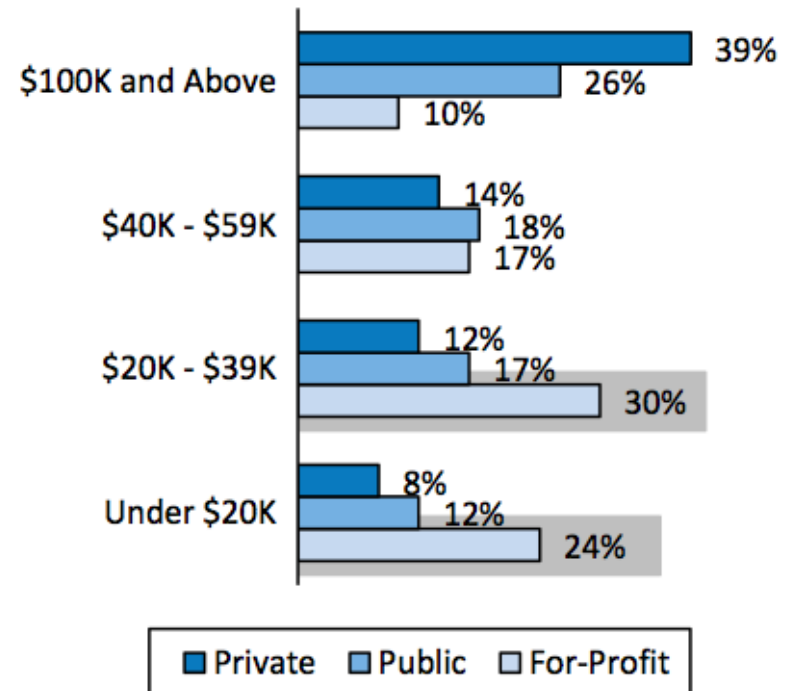
## Attracting More Diverse Students

*Race/Ethnicity of Student Population*



## Serving Families with Lower Incomes

*Family Income for Dependent Students*



# A Governor's Dream

*Competency-Based Alternative Helps Meet Completion Goals*

**"Online. Accelerated. Affordable. Accredited."**

## A Radically New Instructional Model

- No "courses" or "credits," just competency exams
- No traditional instructors; 800+ faculty a mix of assessment designers, subject matter experts, and student mentors
- 32,000 students nationwide
  - Average age = 36
  - 70% work full time
- 30% annual growth

## An Appealing Alternative to For-Profits

- Founded by 19 governors in 1997
- Tuition: \$5,780 per year; hasn't been increased since 2007
- Online, self-paced instruction expands access to non-traditional students
- New subsidiaries in Indiana, Washington, and Texas



WESTERN GOVERNORS  
UNIVERSITY


## "Indiana's 8<sup>th</sup> State University"

- Governor Mitch Daniels commissioned *Western Governors University – Indiana* in 2010
- No state allocation; initial funding from Gates & Lumina Foundations
- WGU students are eligible for state aid
- Critical in meeting completion goals

# Employers Embrace Competency-Based Curriculum


*Employer-Defined Credentials Facilitate “Mixed Sourcing” of Higher Education*

## 1 Industry-Defined Competencies



**Certified Manufacturing Engineer**


<p><i>Entry-Level Technical</i></p> <ul style="list-style-type: none"> <li>• Safety</li> <li>• Machine Operation</li> </ul>	<p><i>Core Academics</i></p> <ul style="list-style-type: none"> <li>• Science</li> <li>• Analytical Thinking</li> </ul>
<p><i>Management</i></p> <ul style="list-style-type: none"> <li>• Leadership</li> <li>• Team Management</li> </ul>	<p><i>Advanced Technical</i></p> <ul style="list-style-type: none"> <li>• Lean Principles</li> <li>• Global Sourcing</li> </ul>

 30+ competencies defined

## 2 Individual Employers’ HR Strategy


<p><i>Recruiting</i></p> <ul style="list-style-type: none"> <li>• “Preferred” or “required” in job postings</li> <li>• Intern recruiting</li> </ul>	<p><i>Development</i></p> <ul style="list-style-type: none"> <li>• Defined career pathways</li> <li>• Tuition assistance policies</li> </ul>
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## 3 Students Steered to “Configurable” Menu of Educational Options



**Credit by Examination**


- National testing service firms and industry association exams



**Online Course Providers**


- Low-cost, self-paced “approved” general education courses

2 + 2 Transfer and Differentiated Bachelor’s



**Tailored Community College Programs**

- Pilots in OH, NC, TX and WA building Applied associate’s degree around industry competencies for direct hires or transfers to 2+2 programs



**Applied Bachelor’s Degrees**

- For-profits launching Bachelor of Science with Concentration in Manufacturing
- Transferable credits from prior certifications
- Tuition reduction agreements for employer partners



# A Few Examples

# Problem(s) facing RIT

- No strategic, intentional thrust for online presence
- No systemic way of infusing new learning techniques into existing programs
- No R&D for academic technology
- No formal collaboration for trans-disciplinary curriculum
- Insufficient culture for experimentation
- Not positioned well to attract non-traditional students

# Problem(s) you face

- Helping faculty balance teaching & scholarship
- Conversion
- Need to do more with less
- Increased competition for students
- Shrinking research funds
- Changing student expectations

# **IN RESPONSE: THE INNOVATIVE LEARNING INSTITUTE**

# Innovative Learning Institute

**RIT Online**

**Collaborative  
Laboratory**

**School for  
Integrative  
Learning**

# Designed to face the challenges

**Massive  
Online**

**Course  
Redesign**

**New  
Student**


**Innovative Learning Institute**

**RIT Online**

**Collaborative  
Laboratory**


**School for  
Integrative  
Learning**

## RIT Online

- Focuses on marketing research and promotion for online programs
  - Builds partnerships with other universities and businesses
  - Delivers extensive support services to online students
- 
- Funded through shared tuition revenue model

## Collaborative Laboratory

- Provides 'safe' environment to experiment with new pedagogies and technologies
- Develops new T&L 'products'
- Provides full service course design and development support for all faculty



## Collaborative Laboratory

- Offers single-point-of-service for all academic technology support
- Pursues and supports grant funded T&L projects



## School for Integrative Learning

- Formerly Center for Multidisciplinary Studies
- Includes Applied Arts and Sciences, and Masters of Professional Studies degrees
- Tenured and 'visiting' faculty

**School for  
Integrative  
Learning**

- Develops new models for 'certifying' learning
- Expands expertise in supporting nontraditional students

External  
Advisory  
Board

Multi-  
disciplinary  
Curriculum  
Committee

ILI

Single-point-of-service and enhanced teaching & learning and academic technology support

Trans-disciplinary collaboration and T&L grant support

ILI

Enhanced support for online & nontraditional students

Marketing services for online and new partnerships

# Key features

Entrepreneurial model

Enhanced level  
of faculty  
support for T&L

Not a college  
or another silo

Online, outreach &  
'product'  
development  
generates revenue  
to reinvest

Increased support for  
non-traditional &  
online students

# Advantages

- Addresses problems you are facing:
  - **Faculty support**
  - **Student support**
  - **Marketing and outreach support**
  - **Increased grant potential**
  - **Puts the “T” back in RIT**
  - **Enhances RIT brand**

# Advantages

- Addresses problems RIT is facing:
  - **Systemic dissemination**
  - **Strategic online presence**
  - **R&D for experimentation**
  - **Formal collaboration for integrative learning**
  - **Offers new ways of including non-traditional students**
- Endorsed by key leadership:
  - **Supports RIT strategic direction**
  - **Model recommended by Academic Senate**
  - **Addresses BOT concerns**
  - **Incorporates key recommendations from Future Educational Technology Taskforce**

# Next Steps

## Summer 2012:

- Presentation to:
  - **BOT Strategic Planning Committee**
  - **Trustees**
- Discussions with:
  - **Administrative Council**
  - **Deans**
  - **Academic Senate EC**
  - **Affected staff**

## Fall 2012-2013:

- Discussion with Academic Affairs committee
- Presentation to Academic Senate
- Campus-wide conversations
- President approves

# QUESTIONS



# Discussion

**WHAT ONE THING SHOULD ILI FOCUS ON...**

**WHAT ONE THING SHOULD ILI AVOID...**

**...TO ENSURE YOU AND YOUR FACULTY  
NEEDS ARE MET**