

# Liberal Arts in Flux: the 21<sup>st</sup> Century Landscape

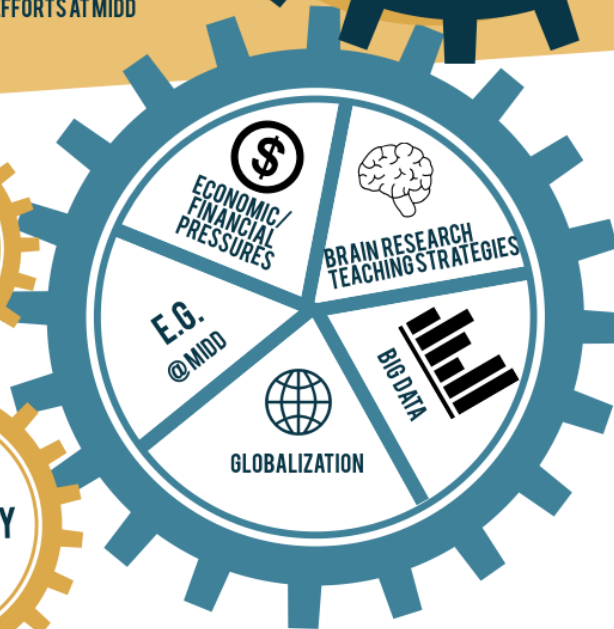
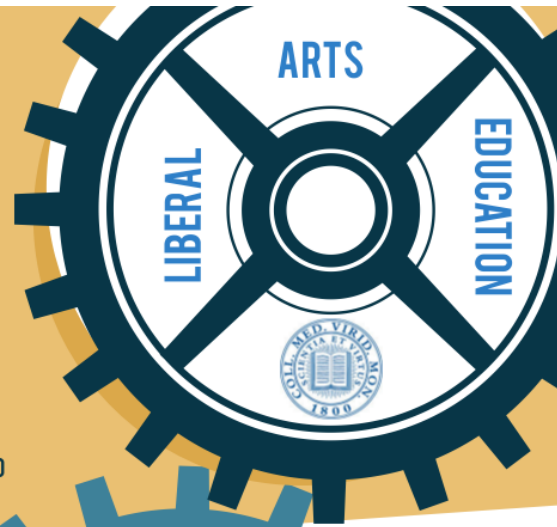
Bill Koulopoulos & Shel Sax  
Middlebury College



# OVERVIEW

## OBJECTIVES

- CONTEXT & FACTORS
- AWARENESS OF EFFORTS AT MIDD
- ASSUMPTIONS



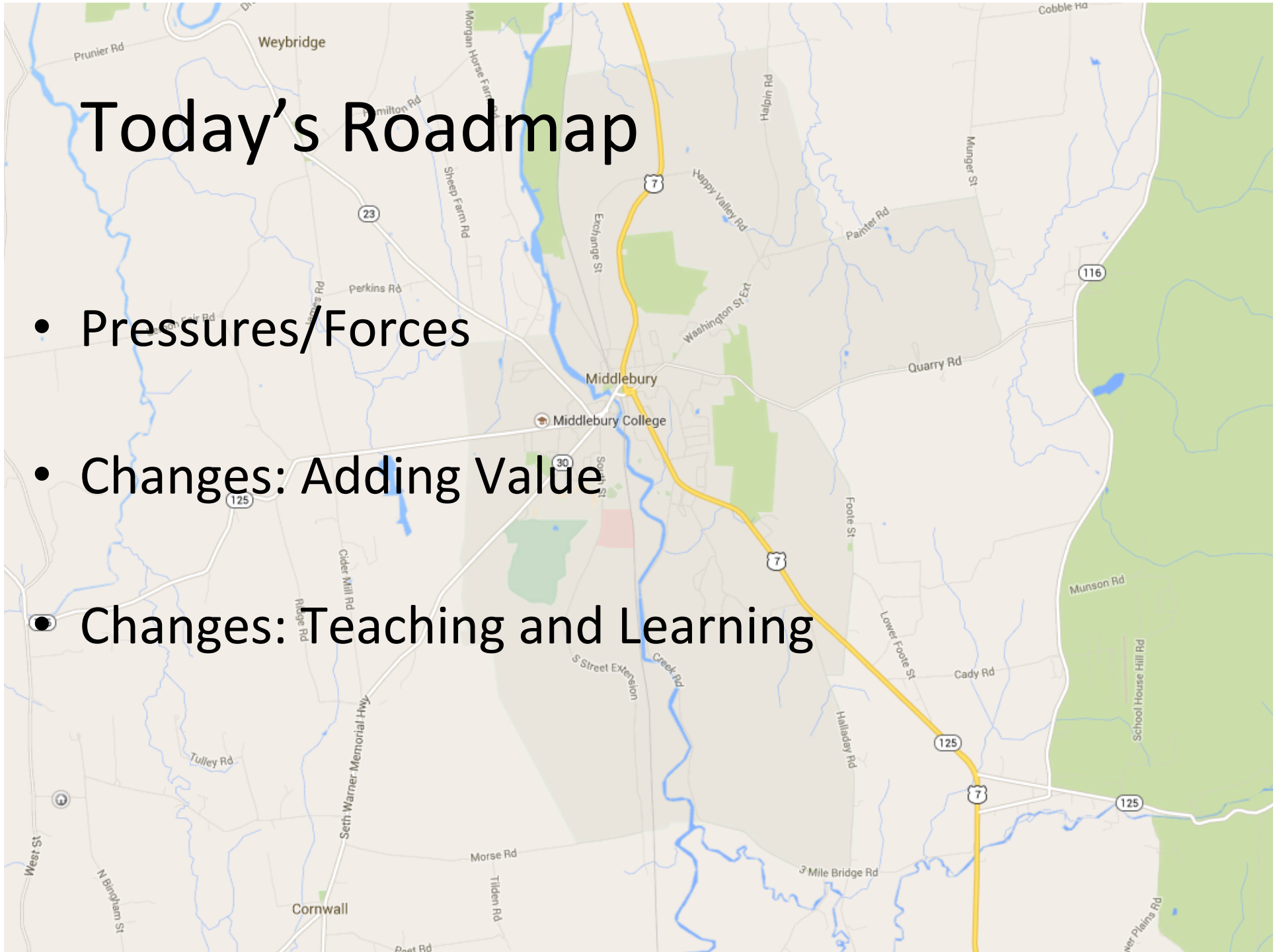
CENTER FOR  
TEACHING  
LEARNING &  
RESEARCH

## SERIES

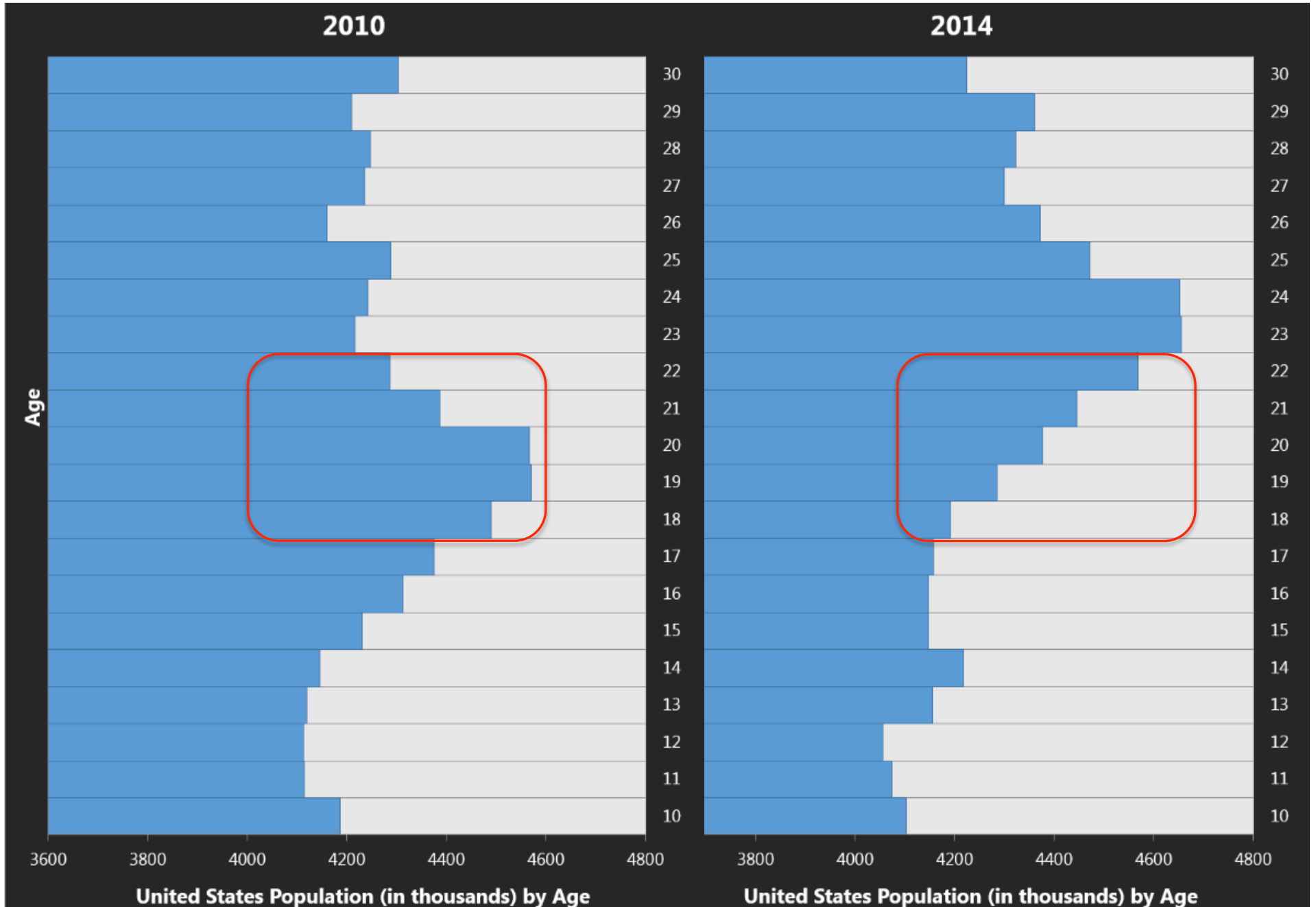
- 02 THE ART OF ENGAGED CONVERSATION
- 03 TEACHING WITH DIGITAL TECHNOLOGIES
- 04 GUIDED INQUIRY LEARNING
- 05 ADVENTURES IN TEAM TEACHING
- 06 NAVIGATING CONTROVERSIAL TOPICS
- 07 PEDAGOGICAL CHALLENGES IN ONLINE EDUCATION
- 08 HYBRID LEARNING & THE LIBERAL ARTS

# Today's Roadmap

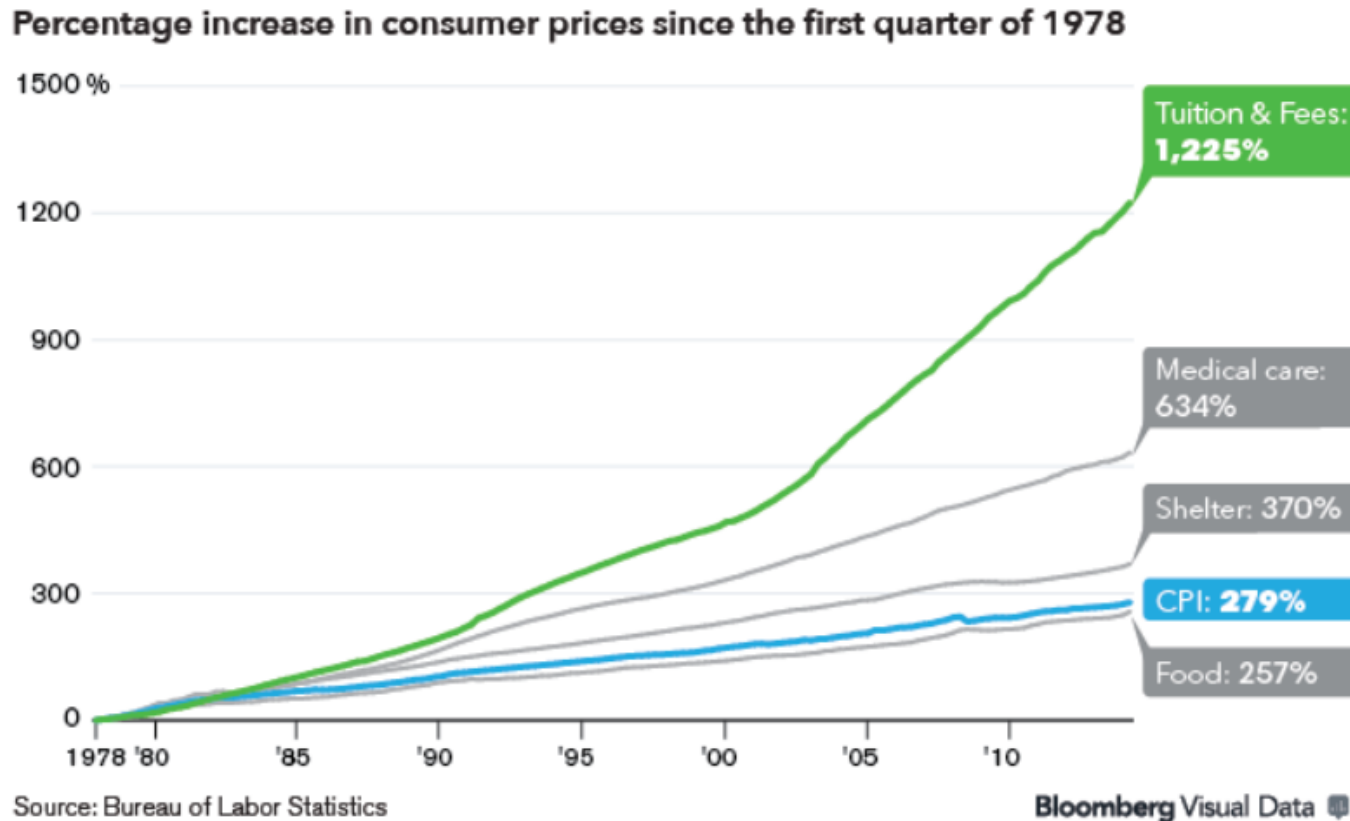
- Pressures/Forces
- Changes: Adding Value
- Changes: Teaching and Learning



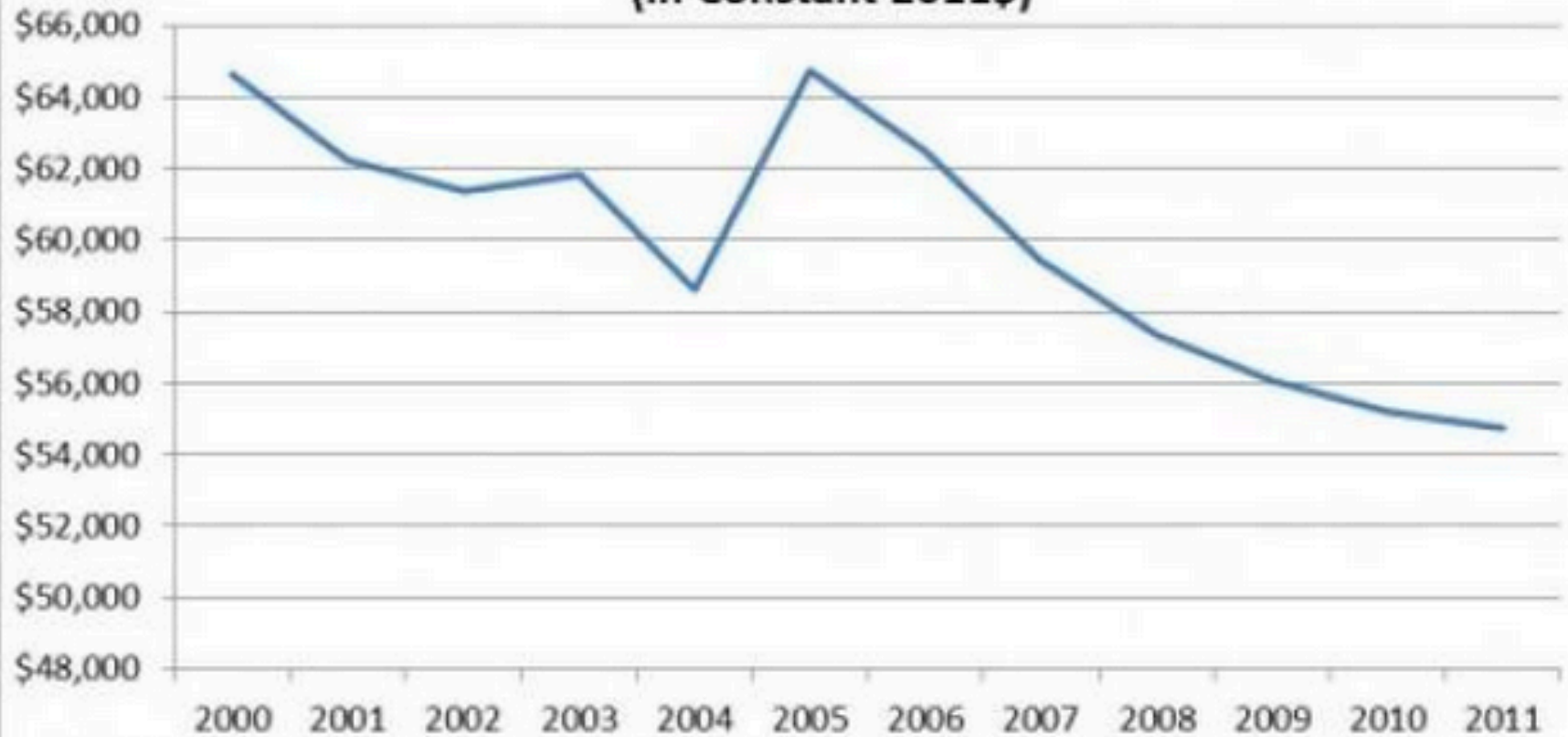
# Shrinking Cohort!



# Affordability of College



### Still Falling: Average Earnings of Young College Grads\* (in Constant 2011\$)



\*Mean Earnings of Full-Time Workers Age 25-34 with a Bachelor's Degree only

**Source: Census Bureau, PPI**

# 53% of Recent College Grads Are Jobless or Underemployed—How?

APR 23 2012, 3:06 PM ET 339

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*A college diploma isn't worth what it used to be. To get hired, grads today need hard skills.*



# Student Indenture

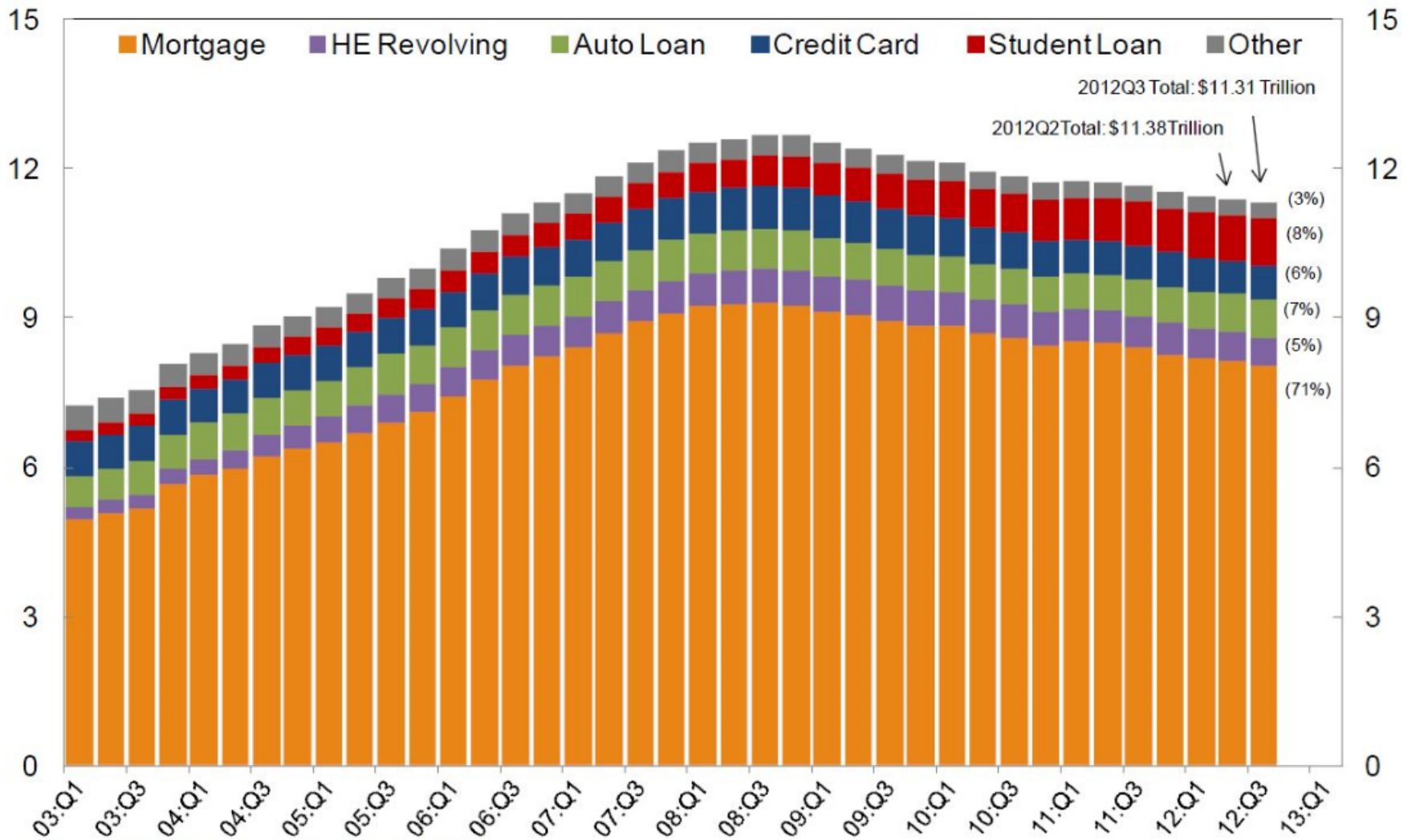




# Total Debt Balance and its Composition

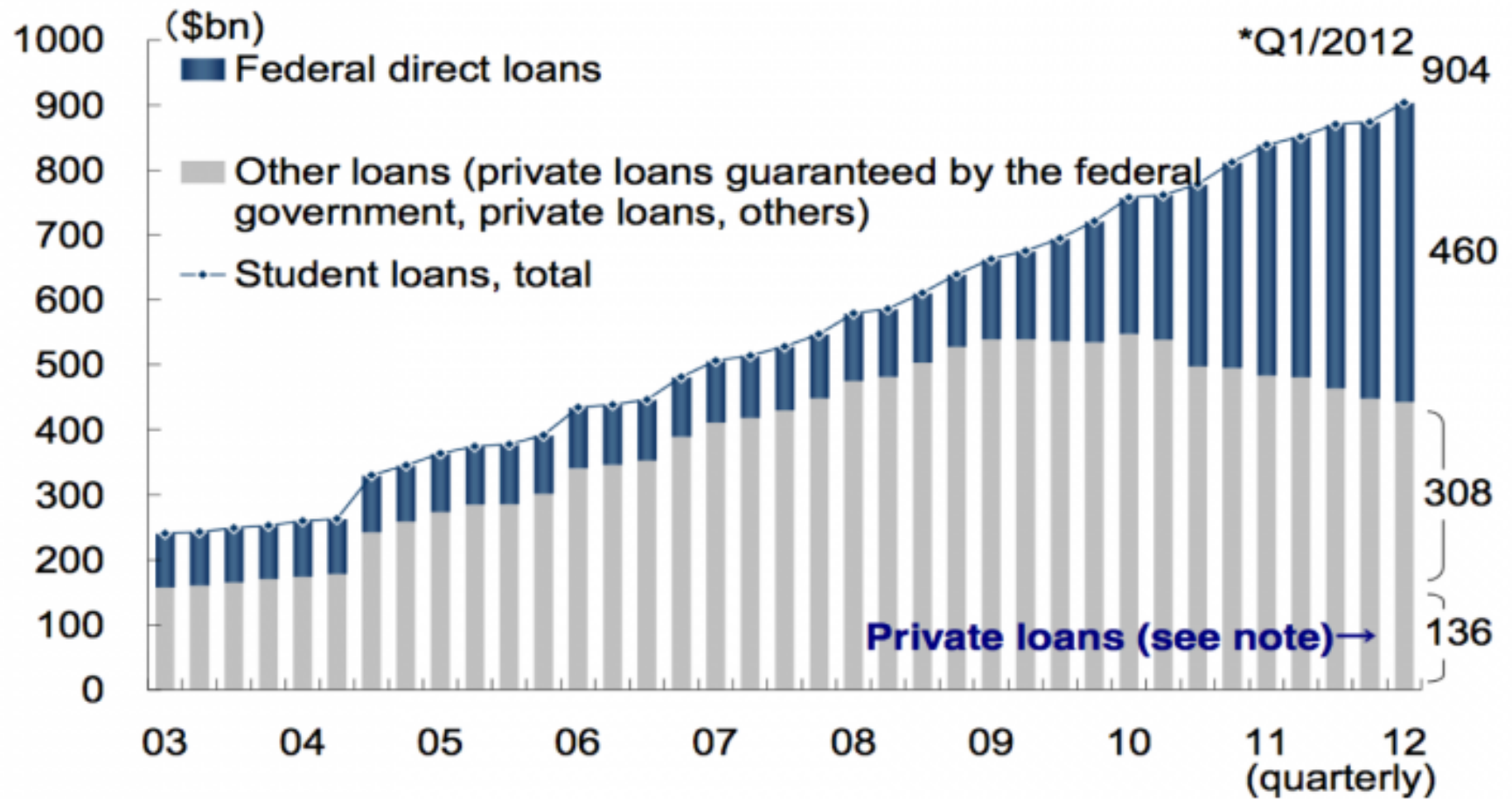
Trillions of Dollars

Trillions of Dollars



Source: FRBNY Consumer Credit Panel/Equifax

# Total Student Loan Debt Outstanding in the United States



Source: Mitsubishi UFJ Morgan Stanley

VIEWPOINT | BALANCE SHEET

# Colleges Struggling to Stay Afloat

## Moody's now has negative outlook for all U.S. universities

Reuters – 6 hrs ago

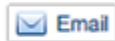
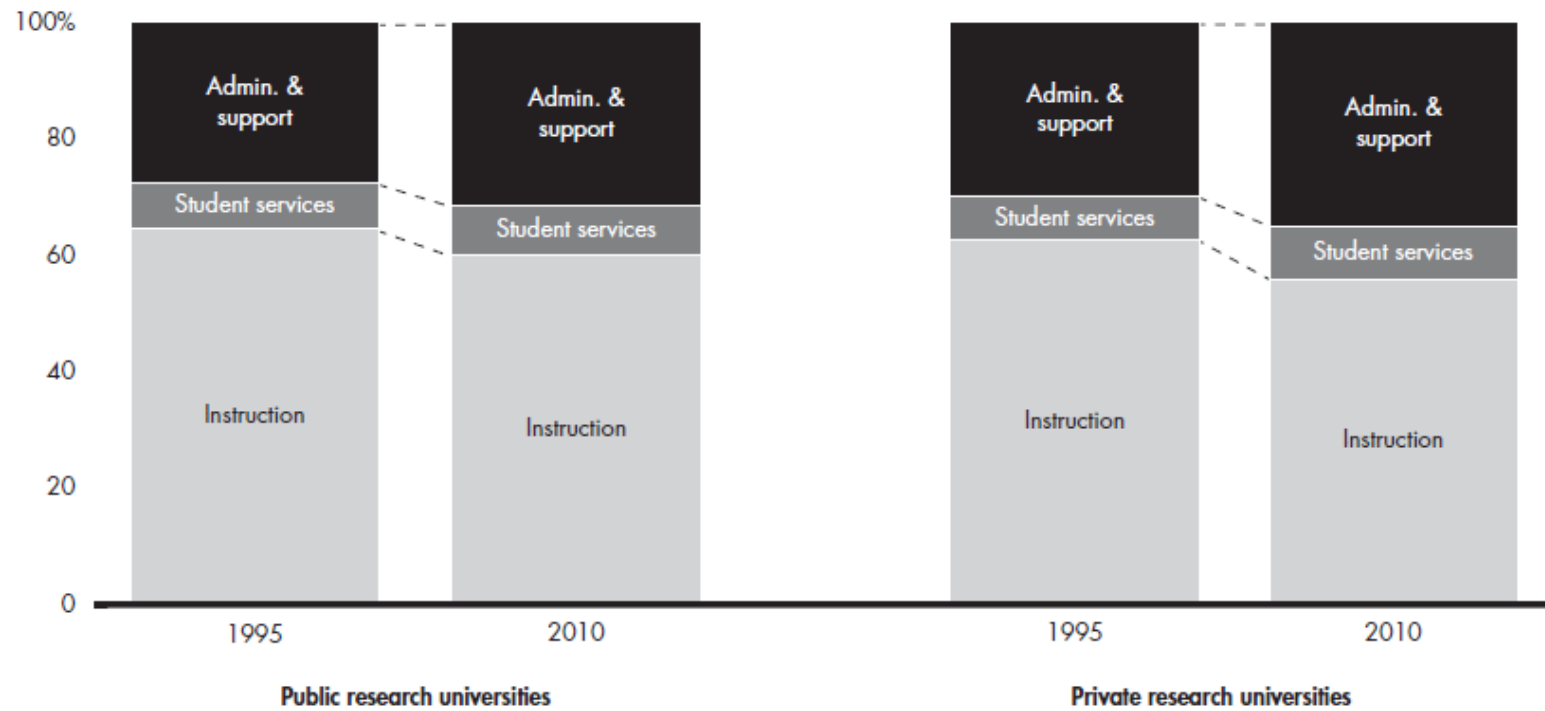


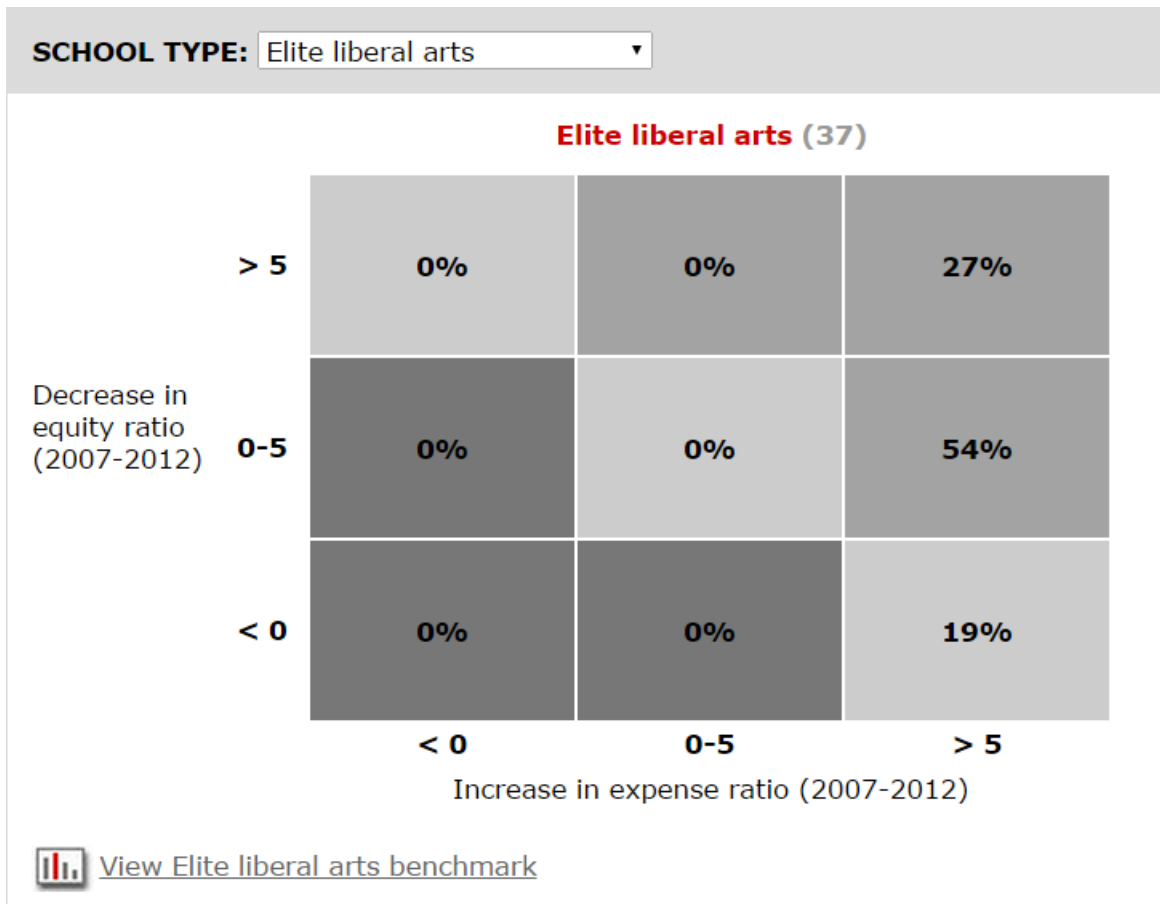
Figure 6: Relative expenditures in US higher education (1995–2010)

Relative share of expenditures per FTE enrollment

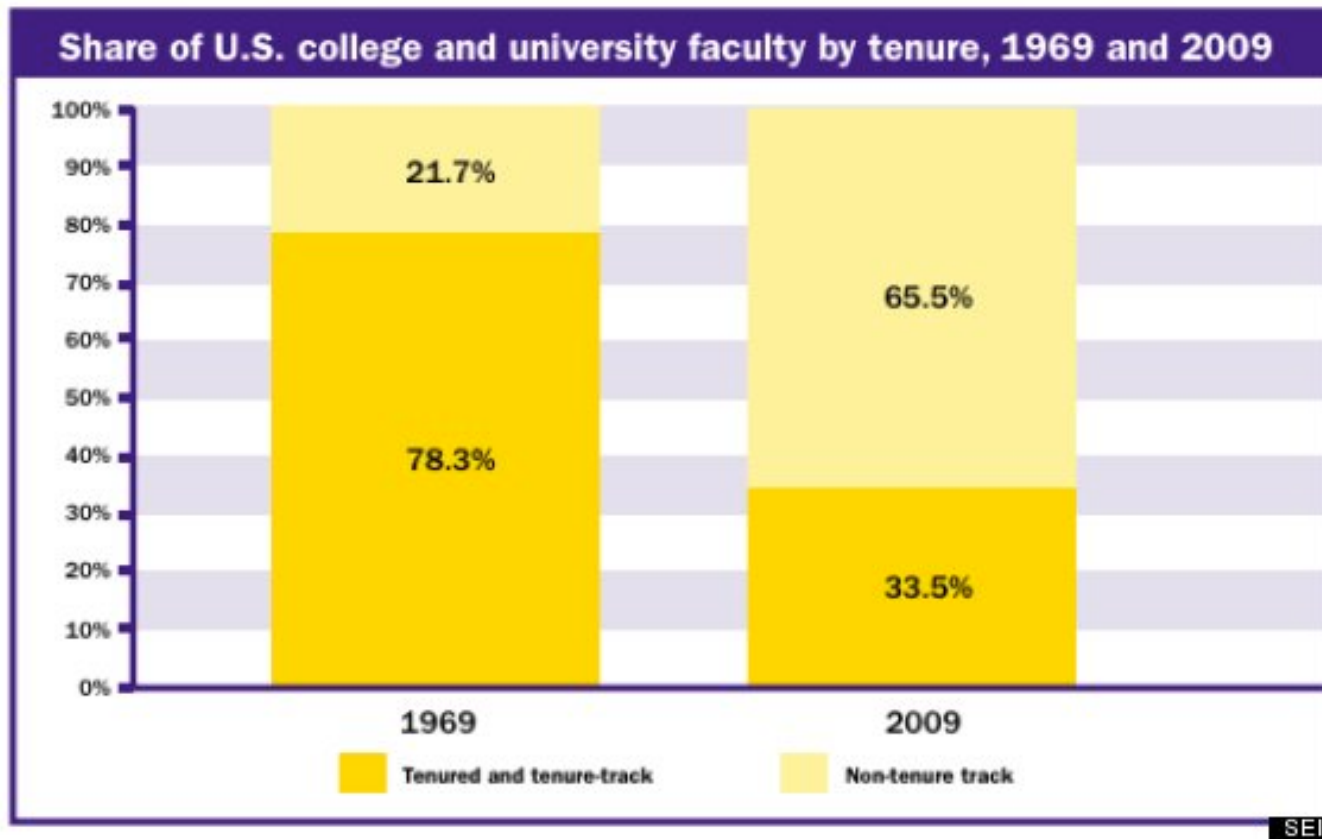


Sources: IPEDS; Bain & Company and Sterling Partners analysis

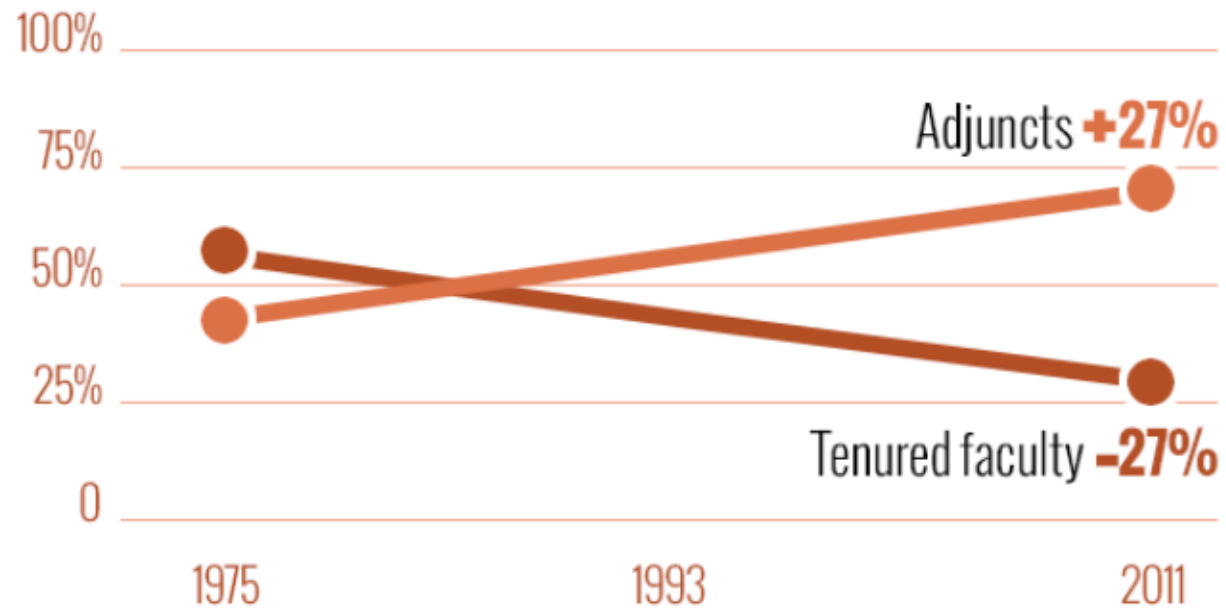
# The Sustainable University?



# Growth of Contingent Faculty



# Fewer Tenure Track Positions



# Competition: The Minerva Project



## The Future of College?

A brash tech entrepreneur thinks he can reinvent higher education by stripping it down to its essence, eliminating lectures and tenure along with football games, ivy-covered buildings, and research libraries. What if he's right?

By Graeme Wood

SEPTEMBER 2014



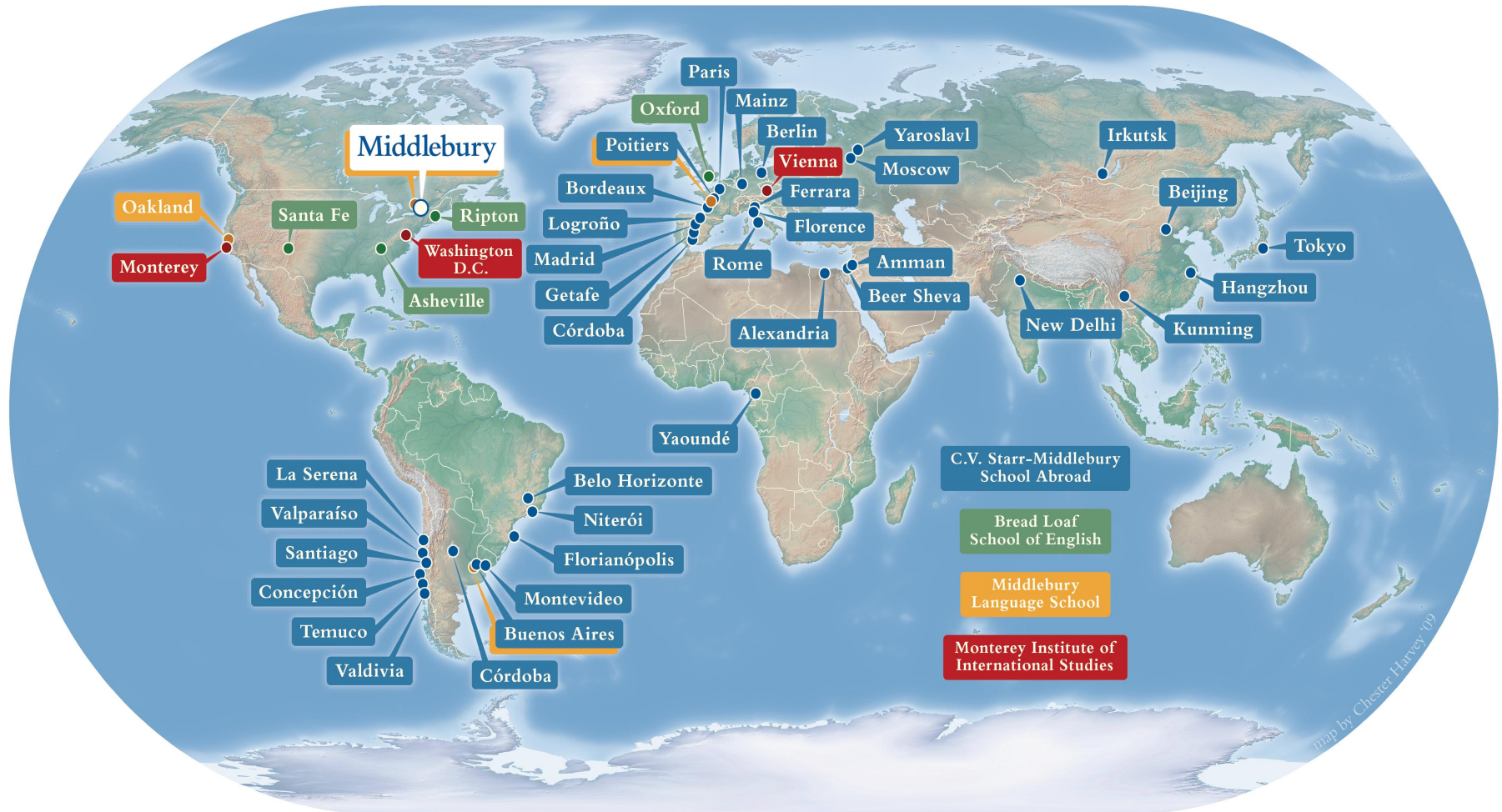
# Globalization

“In a networked global environment in which every university is visible to every other, and the weight of the global dimension is increasing, it is no longer possible for nations or for individual higher education institutions to completely seal themselves off from global effects.”

Marginson, S. & Wende

- Source: Marginson, S. & Wende, M. van der (2007) Globalization and Higher Education.

# MIDDLEBURY AROUND THE WORLD



*“Through the pursuit of knowledge unconstrained by national or disciplinary boundaries, students who come to Middlebury learn to engage the world.”*

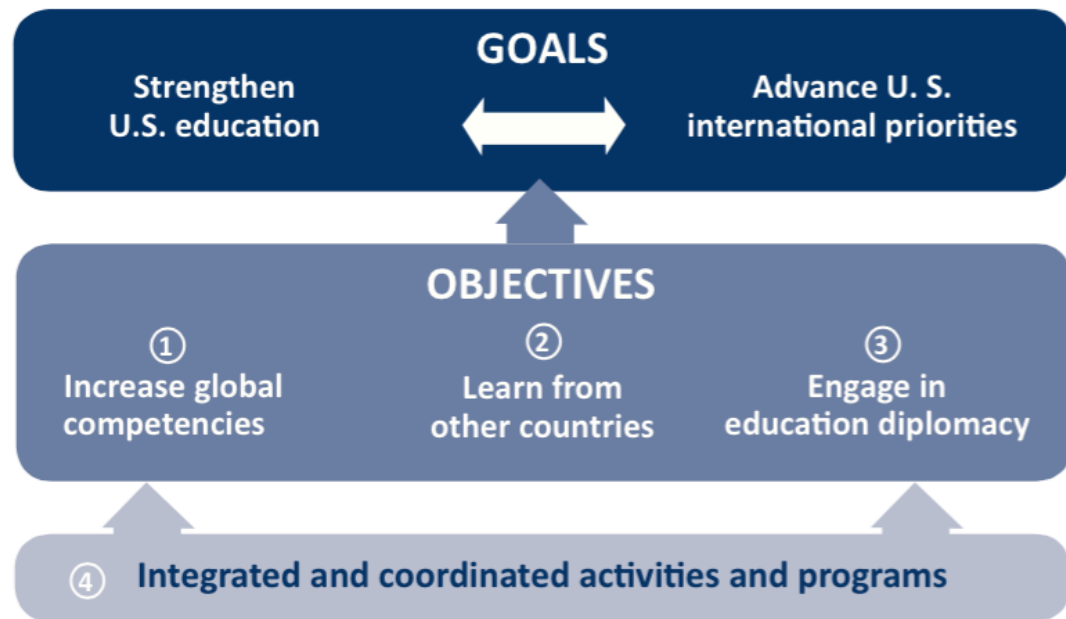
# Federal Policy

“Succeeding globally through international education and engagement”

US Department of Education  
International Strategy  
2012-16

Source: <http://www2.ed.gov/about/inits/ed/international/international-strategy-2012-16.html>

Figure 1: Framework for the U.S. Department of Education International Strategy



# America's Global Future: Are College Students Prepared?

- What do our students need from their college studies
  - to contribute and thrive in a 21st-century economy?
  - to deal with major challenges in virtually every sphere of life?
- What does the US society need from higher education
  - to respond to the new realities of global interdependence, economic innovation, demographic transformation, digital opportunities, and fiscal constraints?
- Source:<http://www.aacu.org/meetings/annualmeeting/am15/symposium>



- High cost of education for students/parents
- Difficulty of sustaining the current financial model
- Employers searching for graduates with practical skills
- Slant towards STEM disciplines
- Global competencies

# Research on Teaching & Learning



- Working Memory
- Cognition
- Multimedia Learning
- Learning Analytics

# Brain Research

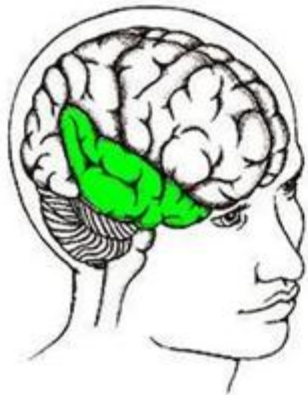
- Technological breakthroughs in brain research
- Experimentation at the K-12 level
- Application of brain research to teaching and learning
- Learning analytics (big data)

# Working Memory

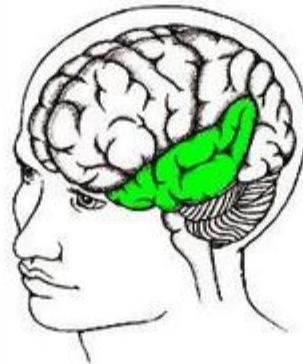
Dual Channel

Limited

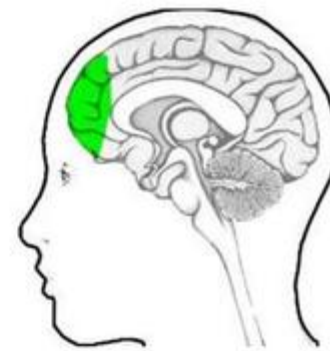
Active Processing



**Phonological loop - temporal lobes of the left hemisphere**




**Visuospatial memory – right hemisphere**



**Central executive – dorsolateral prefrontal cortex**



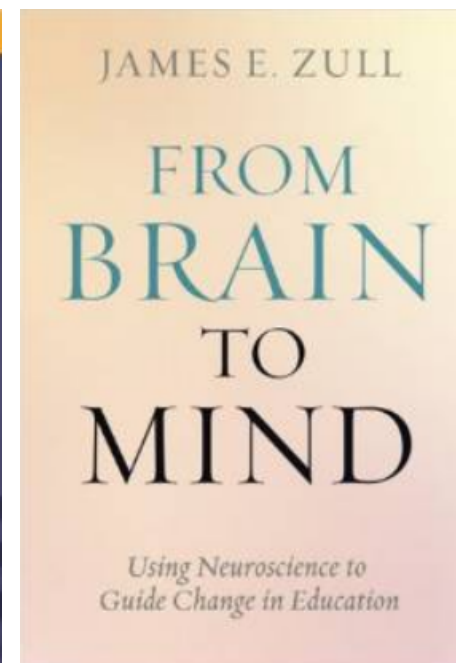
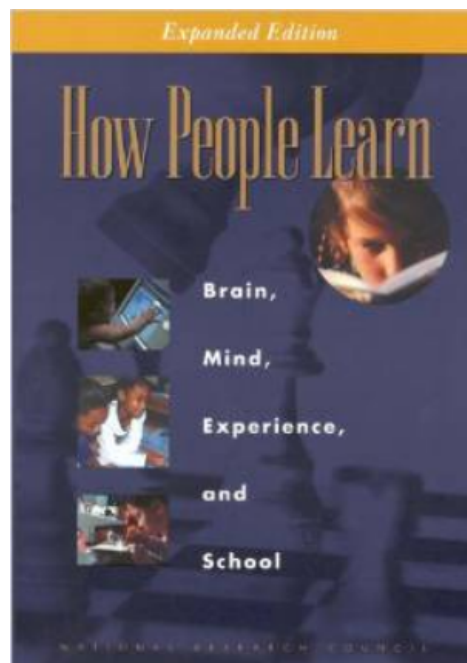
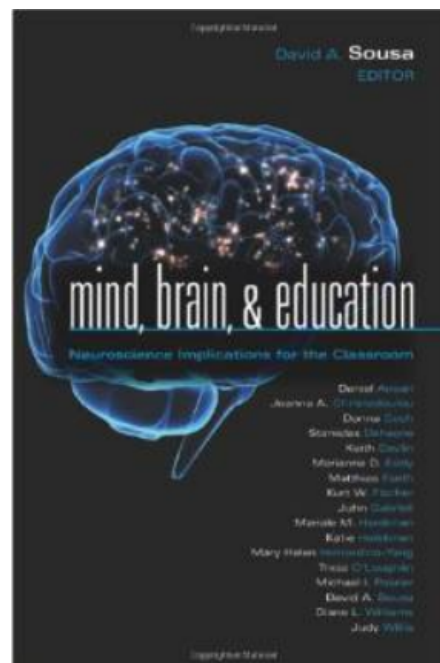
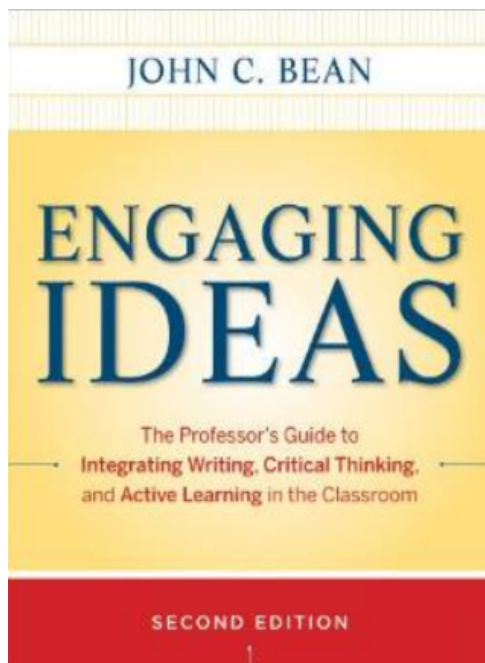
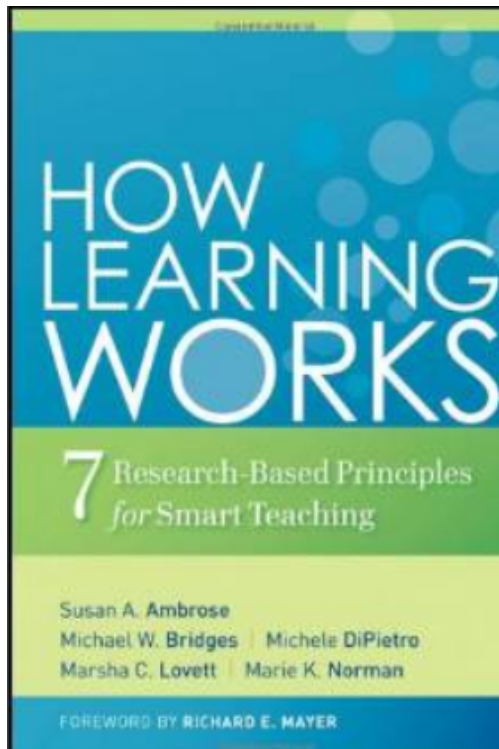
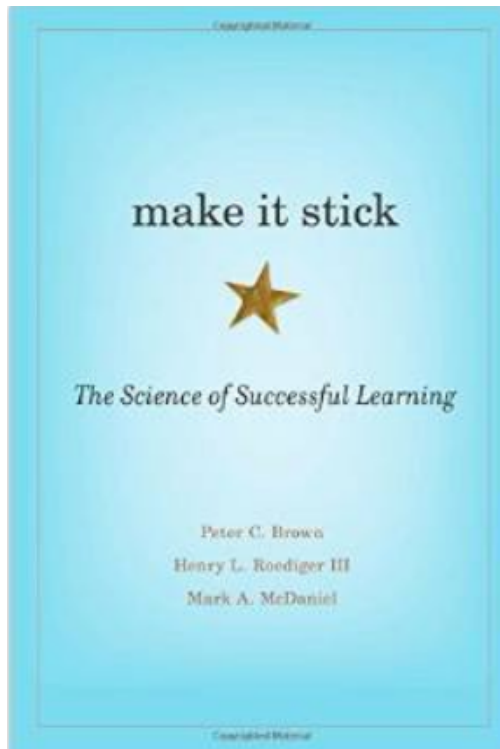
# Growth Mindset

A close-up portrait of Carol Dweck, a woman with dark, shoulder-length hair and bangs, smiling warmly. She is wearing a blue and white patterned scarf and a dark blue jacket. The background is a blurred wooden wall with vertical slats.

**Carol Dweck**  
Professor of Psychology, Stanford

 **KHANACADEMY**

#YouCanLearnAnything



# Big Data & Learning Analytics



## Big Data: What is it?

Big Data is like teenage sex:

- Everyone talks about it
- Nobody really knows how to do it
- Everyone thinks everyone else is doing it
- So, everyone claims they are doing it.

# New Effort to Understand Learning Outcomes



- Public and for-profit institutions collaborating on common data collection and analysis
- Student-level data from six institutions, stripped of identifying information merged into one dataset
- Identify variables that affect student progress

Source: <http://www.insidehighered.com/quicktakes/2011/05/16/new-effort-understand-learning-outcomes#ixzz2A9TIXf1u>

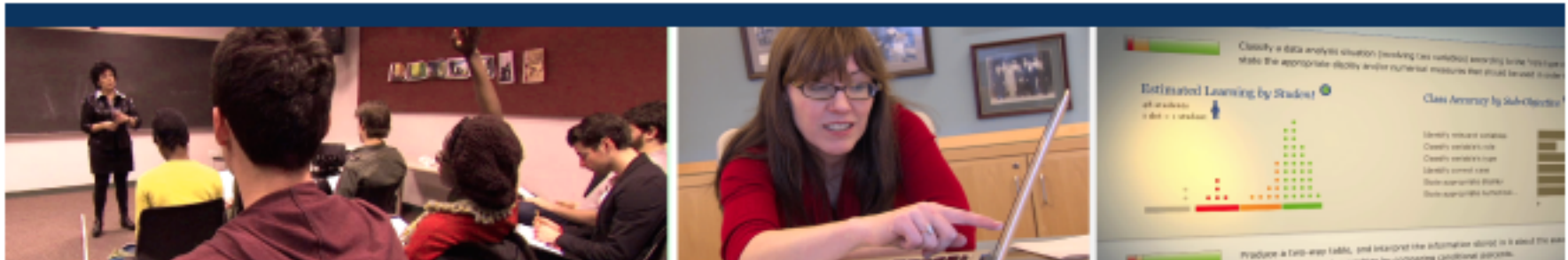


Learn with OLI

Teach with OLI

Get to Know OLI

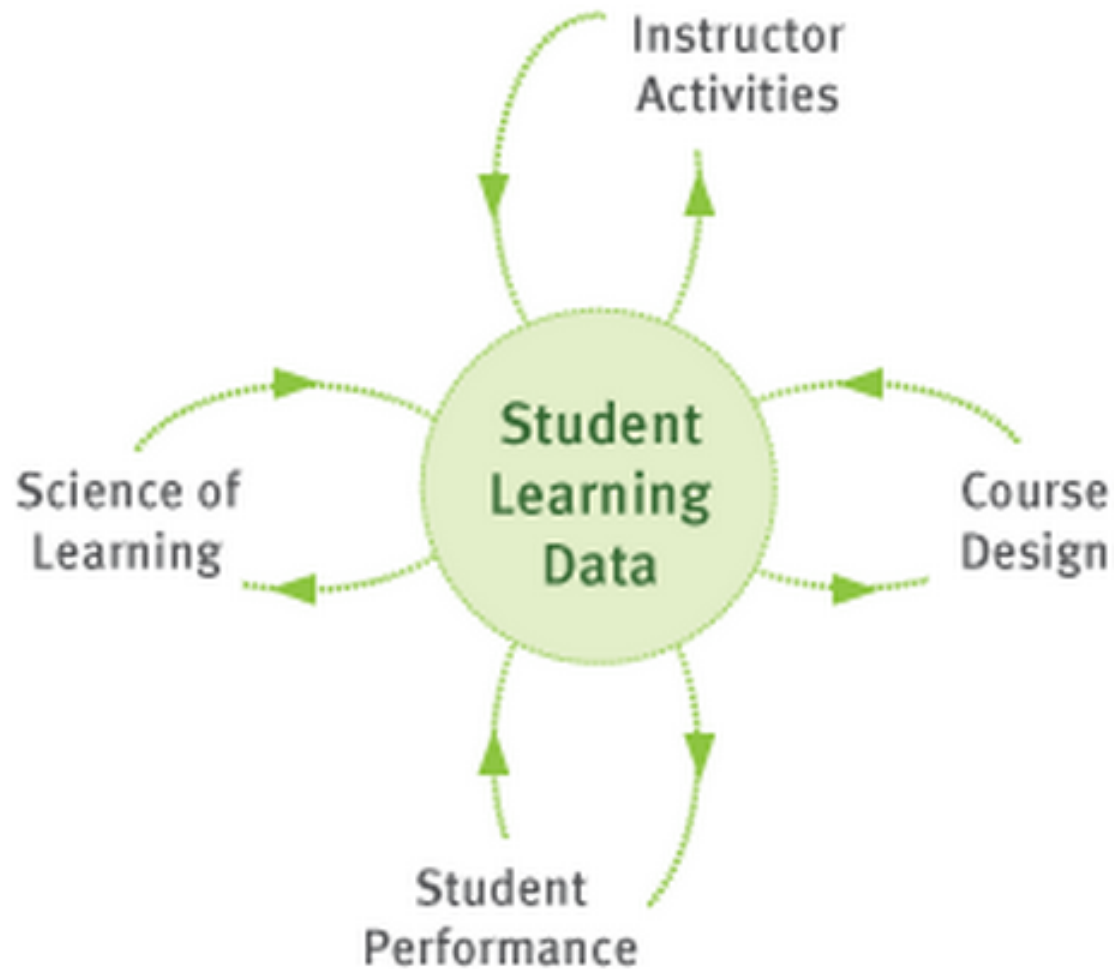
## Our Proven Results



### EVIDENCE-BASED DESIGN

The Open Learning Initiative (OLI) creates courses based on the findings of learning science and then evaluates those courses based on actual student performance in real classrooms.

# Data Driven Curricular Design



Source: <http://oli.cmu.edu/get-to-know-oli/learn-more-about-oli/>



## Pressure to Add Value

- Cognitive research
- Teaching innovations
- Big data (learning analytics)



# What is Middlebury Doing?

## Programs and Opportunities:

Liberal Arts Plus

MIDDCore

Center for Social Entrepreneurship

Study Abroad

Internships

Summer Study

Digital Liberal Arts

## In the Classroom:

Engaged Discussion

Flipped Classroom

Clickers

Hybrid Courses

Team Teaching

Guided Inquiry Learning

Collaborative and Group  
Work

Project-based Learning

## Old Chapel: The Liberal Arts Plus

But for my purposes, I wanted “liberal arts plus” to be more expansive, to include more than what happens inside the classroom, be it with our dedicated faculty or with both our faculty and practitioners. I believe it is important—crucial—that one’s education extends beyond the classroom walls; what happens outside that realm is the difference between a liberal arts education today and yesterday, and it has to be if our graduates are to succeed in the 21st century.

*- President Liebowitz, 2014 Baccalaureate address.*



## **This Credit Bearing College Program Offers:**

- A highly collaborative learning environment
- Mentors who are top-tier professionals
- Problem-solving that is focused on the real-world
- Exposure to worldwide businesses and organizations

See [Core Strengths](#)



Middlebury Center for  
**SOCIAL ENTREPRENEURSHIP**



ABOUT

EVENTS

PROGRAMS

ARCHIVES

@MIDDLEBURY

RESOURCES

GIVING

BLOG

- Summer grant program
- Fellowships
- Integration into curriculum
- Weekly forum on relevant selected topics



- Students link what they learn in the classroom with applied work in the community.
- Through community-connected projects, students will meld theory with practice
- Connect their Middlebury education to the wider goals of our global society.



# Study Abroad

Africa

Asia & the Pacific

Australia & New Zealand

Europe

Latin America & the Caribbean

Middle East

United Kingdom & Ireland

# Center for Careers & Internships



Winter Term internships for credit

Summer internships with transcript notation





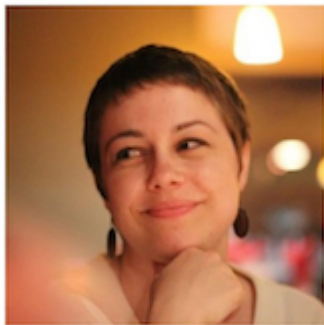


# Teaching with (and about) Digital Technologies

Monday January 12, 2015, 11:00 – 12:00 am



- How can students engage critically with technology in the classroom?
- How can digital assignments further pedagogical goals?
- a discussion of these questions, and some practical examples of implementing digital technologies in the classroom.





"Literature cannot meaningfully be treated as data. The problem is essential rather than superficial: literature is not data. Literature is the opposite of data." In particular, "algorithms, exactly like fascism, work perfectly, with a sense of seemingly unstoppable inevitability, right up until the point they don't.

- *Stephen Marche*

# Engaged Discussion

Thursday January 8, 2015 11:00 – 12:00



- Deepen and unify discussion in the classroom:
  - Informal writing assignments
  - Initiating and shaping discussion
  - facilitating a conversation

# Navigating Controversial Topics

Monday January 19, 2015, 11:00 – 12:00



- Dealing with student's deeply held preconceptions and convictions and may arouse powerful emotional responses.

Thoughtful, well-facilitated discussion can have many benefits

- Encouragement of mutual respect during the course of disagreement

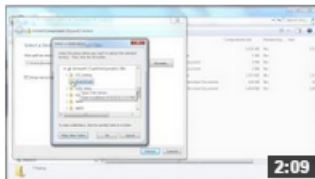
# Flipping the Classroom



## GISatMidd

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### Week 1: Intro to Raster Data Model



#### 0100 Introduction

by GISatMidd  
301 views • 3 months ago



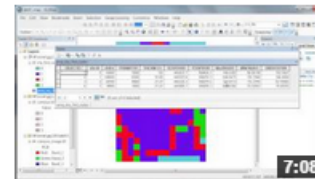
#### 0103 Workspace management in ArcMap

by GISatMidd  
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#### 0104 Create raster from text file

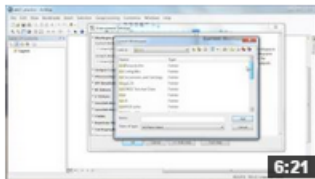
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#### 0105 Calculate area of raster zones

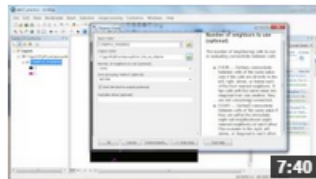
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### Week 2: Euclidean space



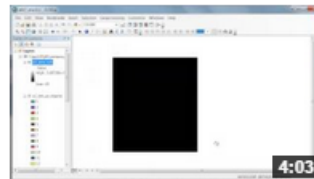
#### 0200 Introduction

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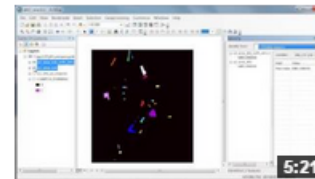
#### 0201 - Make object raster from boolean raster

by GISatMidd  
242 views • 3 months ago



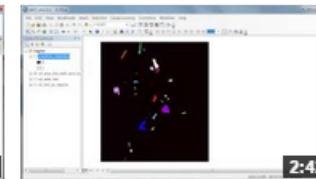
#### 0202 Calculate area of raster objects

by GISatMidd  
216 views • 3 months ago



#### 0203 Apply a mask with a boolean raster

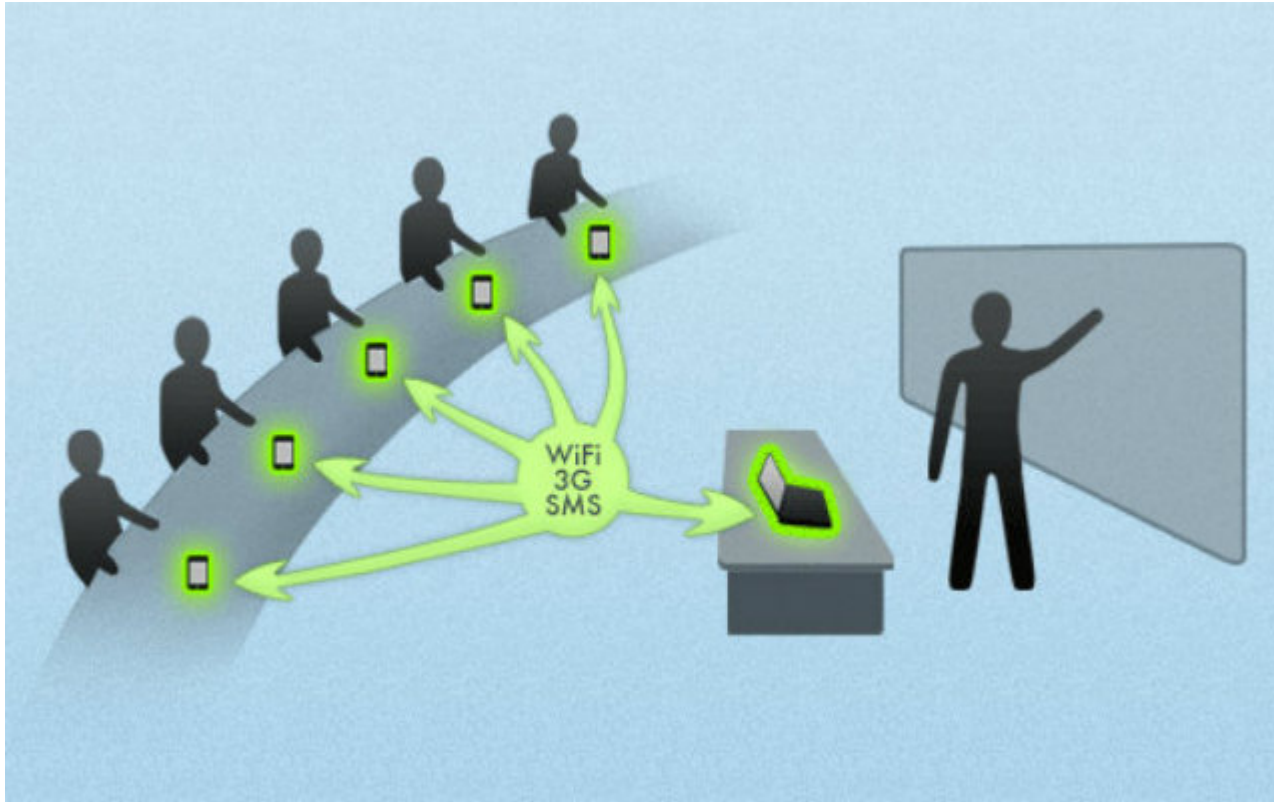
by GISatMidd  
228 views • 3 months ago



#### 0204 Divide raster by a constant

by GISatMidd  
163 views • 3 months ago

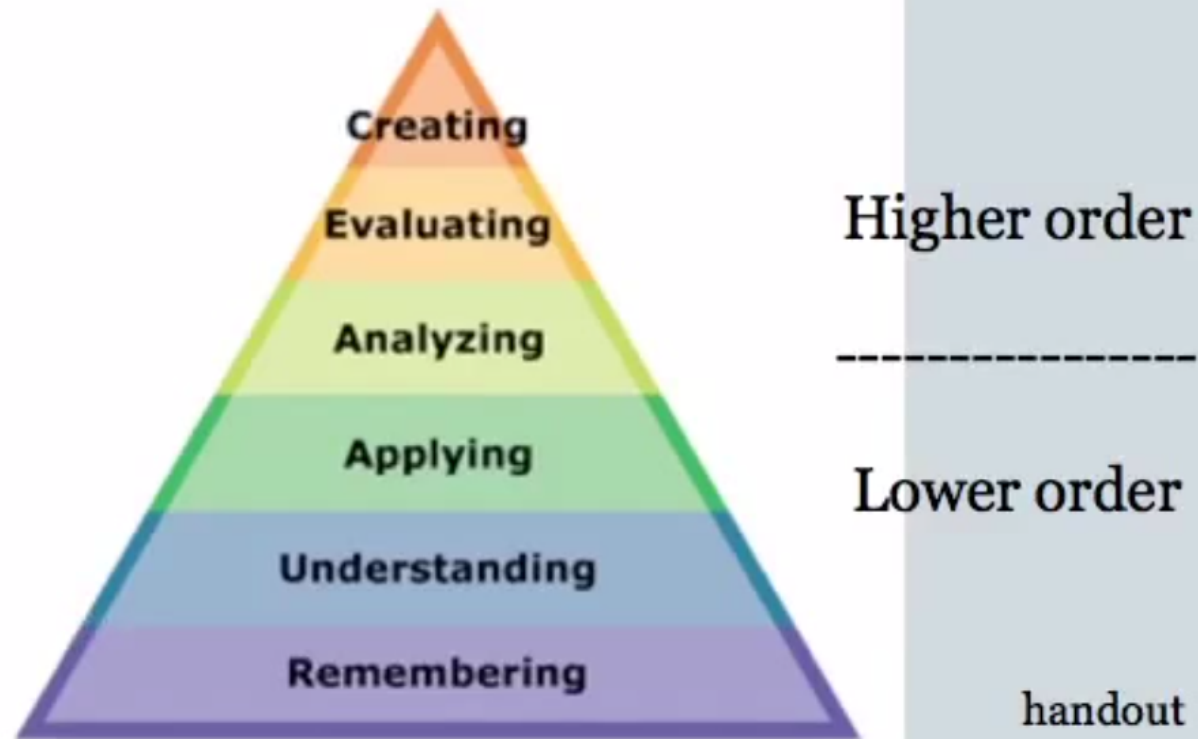
# Clickers – Personal Response Systems



# Clickers

Use questions at a variety of cognitive depth

Do the questions you use intellectually challenge your students or simply assess their factual knowledge?





# Hybrid Classes



## **Insurgency and Security Policy - 22576 - PSCI 0392 - A**

Middlebury students will be in class until 4:05 p.m. and must also register for PSCI 0392Z (Discussion). Monterey students will be in class until 5:00 p.m. and DO NOT register for PSCI 0392Z (Discussion). To align the Middlebury/MIIS schedules, Middlebury students will need to begin their coursework prior to their return to campus for spring semester.

**Associated Term:** Spring 2015

# Hybrid Learning

Thursday, January 29, 2015, 11:00 – 12:00



We will soon consider learning as existing along a continuum of different levels of technological integration; all will be considered learning.

# Pedagogical Challenges in Online Education



- dramatic shift to online education in UVM's summer session
- implications for teaching practices in view of the differences in the online environment.

# Team Teaching Across the Disciplines

Thursday January 22, 2015, 11:00 – 12:00



- Benefits and challenges of team teaching across the disciplines?
- Andi Lloyd, Chris McGrory Klyza, Tim Spears, and Steve Trombulak will offer perspectives.
- a discussion about innovating as teachers and pursuing the full potential of a liberal arts education.

# Guided Inquiry Learning



Process Oriented Guided Inquiry Learning

A search bar with the word "Search" inside and a magnifying glass icon on the right side.

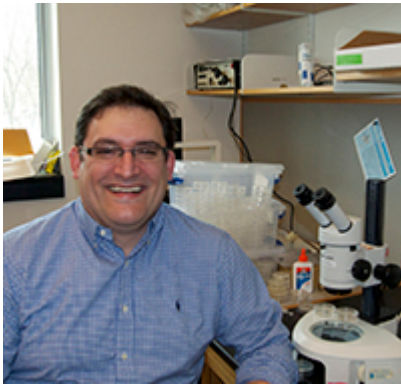
- About POGIL
- Post-Secondary
- High School
- Events
- Groups
- Resources
- News
- Contact / Donate

Students learn better when they are working together in self-managed teams.



# Process Oriented Guided Inquiry Learning

Thursday January 15, 2015, 11:00 – 12:00



- explore a student-centered pedagogical strategy
- emphasizes deep thinking, deep learning, and the creative process.

# As We Move Forward ...

Clay Christensen:

“Success in an increasingly competitive higher education environment requires each institution to identify and pursue those things it can do uniquely well”

*Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns, 2010*