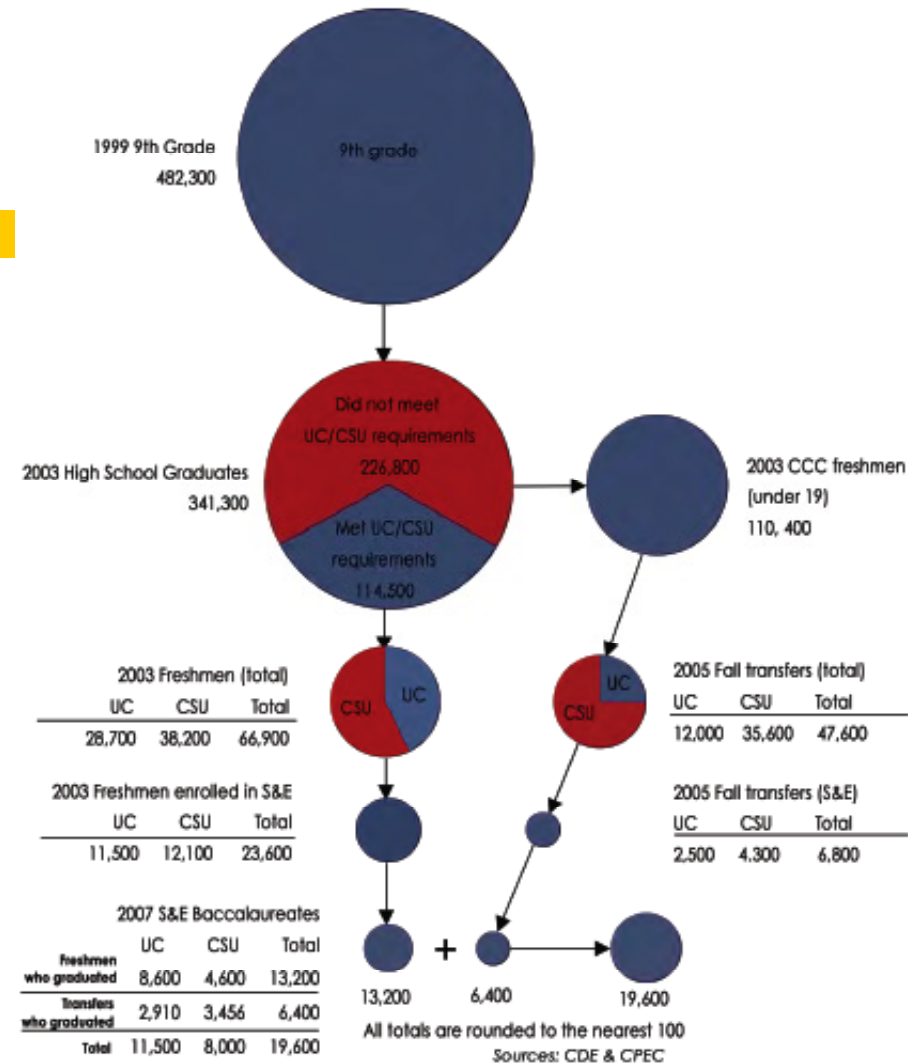


# 9-20 Continuum – Declining percentages

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- 71% of 9<sup>th</sup> graders graduate HS in 2003
- 24% are **UC/CSU eligible**; 14% enroll
- 23% enroll at CC level
- 10% transfer to UC/CSU from CC
- 4% earn UC/CSU degrees in science & engineering



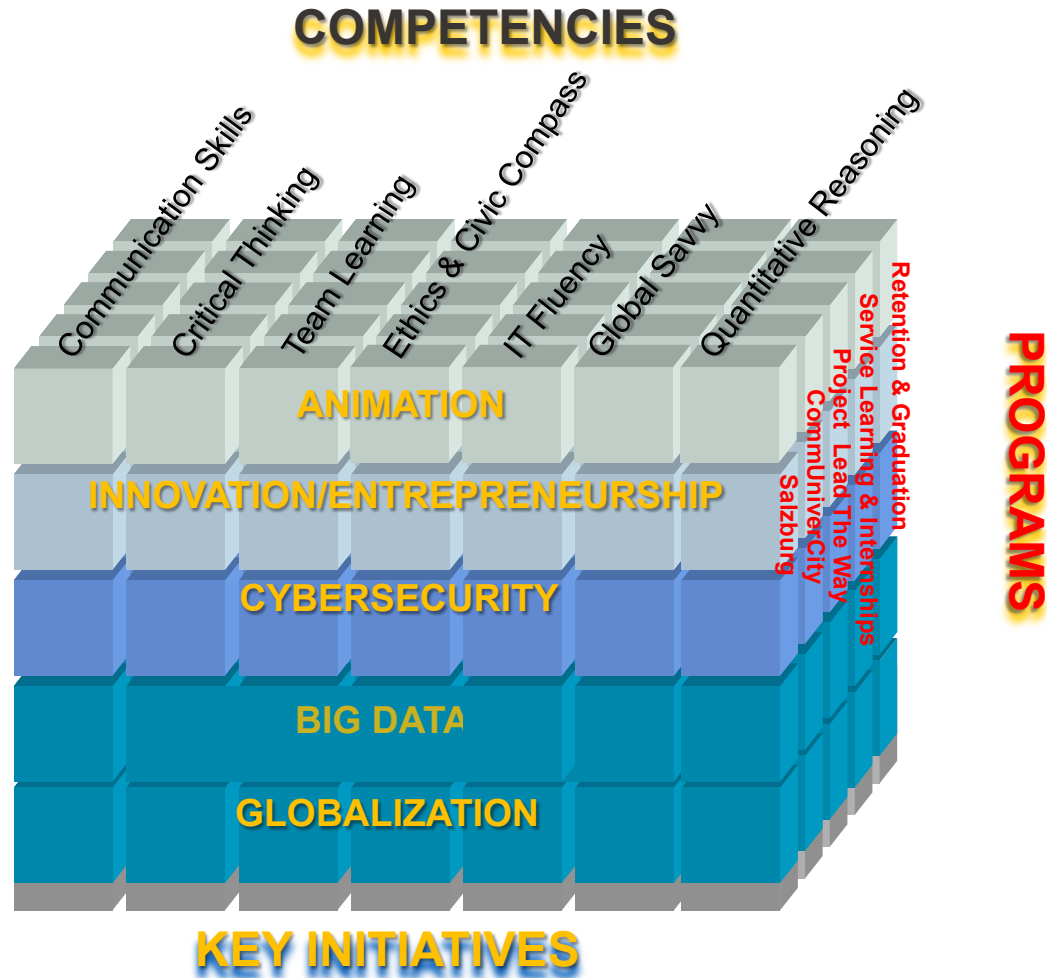
# Overview: Current H.E. Landscape

- Continued erosion of funding base
- Major demographic shifts
- Family income as a predictor of college attainment
- From Arms-race to brains-race
- Universities as complex organizations
- Anticipatory retardation or “the Penguin Effect”
- Impact of technology

# An Open Learning Ecosystem

- Requires innovative methods of teaching and learning
- Accommodates a very broad mixture of learning providers
- Removes the old divides between formal education and informal learning
- Uses transparent and strategic technologies where appropriate
- Offers and delivers learning that is social, contextual, and continuous

# SJSU STEM Framework & Transformation Systems



# Key Initiatives at SJSU

- ❖ Partnership with CISCO on IT infrastructure
- ❖ Offering blended learning using MIT edX
- ❖ Offering MOOC for college credit with Udacity
- ❖ Partnership with Stanford on preparing future faculty
- ❖ Initiatives on Cybersecurity, Big Data/Analytics
- ❖ Professional Master's Degrees/Stackable Certificates
- ❖ Partnership with Community Colleges for increasing retention and decreasing time to graduation

# For More Details Please Read

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□ [http://www.sjsu.edu/  
president/whitepaper/](http://www.sjsu.edu/president/whitepaper/)

# SJSU MOOC Partnership with Edx

## Circuits and Electricity Course

- **EE 98 Upper Division course on Introduction to Circuit Analysis required for all EE Majors**
- **Flipped classroom with 84 students, Fall 2012**
- **Outside Class**
  - ❖ **Students learn from Edx MIT Video Lectures before coming to class**
  - ❖ **Students do online interactive quizzes and labs**
- **In Class**
  - ❖ **Instructor answers questions for first 10-15 minutes**
  - ❖ **Students solve problems in groups of three with help from instructor and two teaching assistants**

# Comparison of In-Class and Flipped Performance in EE 98

- **Spring 2012 (traditional classroom model)**
  - ❖ **Nearly 40% of students had to retake the course**
  - ❖ **Final exam average 50.4%**
- **Fall 2012 (Edx based, flipped model)**
  - ❖ **Only 9% had to retake the course**
  - ❖ **Final Exam average 60%**



# Broader Impact of SJSU-Edx Collaboration

- ❖ **The flipped version of EE 98 is being offered again this semester at SJSU.**
- ❖ **10 out of the other 23 CSU campuses have expressed interest in adopting this course for their engineering curricula**
- ❖ **We are working with EdX to develop additional courses utilizing this flipped model in the sciences, social sciences, and humanities**
- ❖ **Goal is for SJSU to become the West Coast Edx Center of Excellence**

# SJSU Plus/Udacity Partnership

- ❖ **Beginning Spring 2013, SJSU announced a partnership with Udacity ([www.udacity.com](http://www.udacity.com)) to develop online, for-credit courses**
- ❖ **Three high-enrollment/gateway/bottleneck courses chosen to be developed as online, highly interactive, inquiry based courses: Remedial Math, Algebra 1 and Statistics**
- ❖ **Courses are being taught by teams consisting of SJSU faculty and Udacity Staff**
- ❖ **A pilot study (Spring 2013) involves small (~50 each) groups –one SJSU students and the other drawn from community colleges, returning students, veterans, and even high school students**

# SJSU Plus/Udacity Partnership

- ❖ **SJSU Plus/Udacity courses will be available for SJSU students and the general public for \$150 (equivalent to community college tuition)**
- ❖ **An NSF grant has facilitated assessment of the student and faculty experiences in the online math courses as compared with traditional instruction in the same courses.**
- ❖ **Additional funding is being sought to expand this study to the remaining courses and over multiple semesters**

# SJSU Plus/Udacity Partnership

- ❖ **Lower cost of instruction**
- ❖ **Increased access to students in high demand gateway courses**
- ❖ **Course materials and support available 24/7**
- ❖ **MOOC 2.0 model designed to improve student success**
- ❖ **Udacity MOOC (no-credit) versions of the SJSU Plus courses have already attracted over 5000 registrants**
- ❖ **We are developing additional offerings with Udacity through SJSU Plus**