

FIU: Transforming STEM Education

Creating a National Laboratory for Change

November 30, 2012



50,000 Fall 2012 enrollment

52,000 Fall 2015 student enrollment

100,000 Students will graduate from
FIU in the next decade

3,513 Dual enrollment
students

167,000 Alumni

180 Bachelor's, master's and
doctoral programs

96 Percent of faculty hold doctoral degrees
or highest degree attainable in their field

12 Colleges and schools including Medicine,
Law and Architecture



FIU STEM by the Numbers

1st in awarding STEM degrees to Hispanics	51,000+ degrees awarded to under- represented minorities during the past decade	84% of FIU degrees are awarded to minorities	1,693 STEM graduates in 2010-2011
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Excelencia in Education Report

The Top 25 Institutions Graduating Hispanics in STEM

47% of STEM degrees awarded to Hispanics nationally by Top 25 institutions	60% of doctoral STEM degrees awarded to Hispanics nationally by Top 25 institutions
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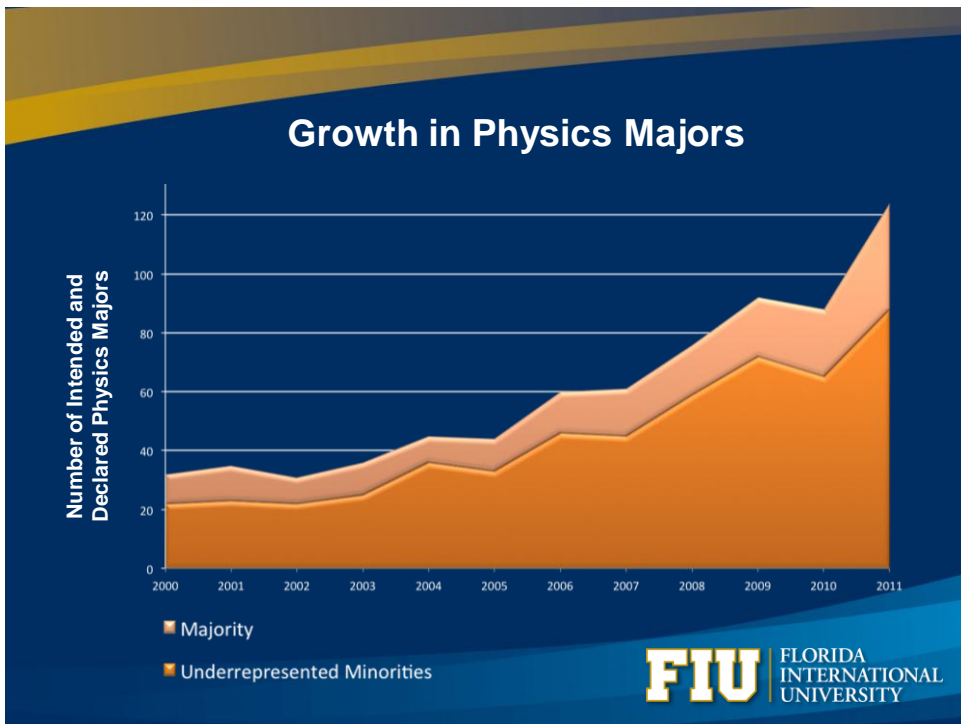
PCAST recommendations provide a framework. But, we must be bolder when it comes to underrepresented minorities.

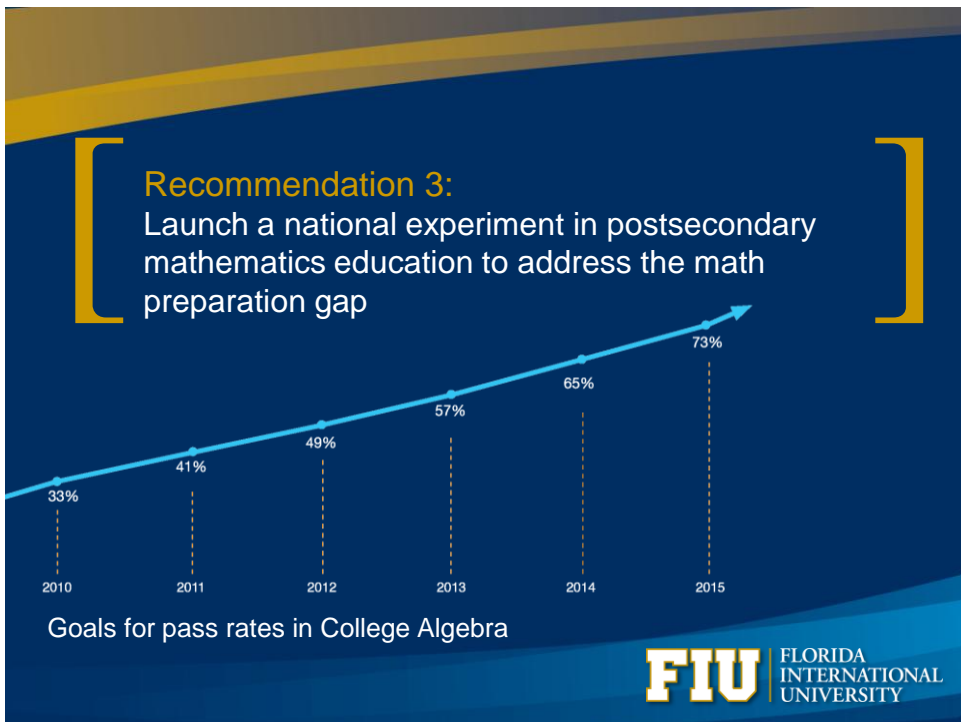
Recommendation 1:

Catalyze widespread adoption of empirically validated teaching practices

Recommendation 2:

Replace standard laboratory courses with discovery-based research courses





Recommendation 4:

Encourage partnerships among stakeholders to diversify pathways to STEM careers

Robust Partnership with Miami-Dade County Public Schools

- Quarterly meetings with Superintendent and top leadership
- Targeted agenda, 10 task groups
- Community partnership with Miami Northwestern Senior High
- Sponsored by JPMorgan Chase
- Quadrupled enrollment

FIU and the Department of Energy Fellows Program

65

Department of
Energy Fellows
since 2007

26

fellows obtained
graduate degrees

12

hired by federal
agencies

100

Percent of
graduates working
in the energy
industry

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Challenges remain

- Mathematics
- Place-bound students: going where the jobs are
- First generation students are unique

Going forward as a nation

- Underrepresented minorities should be a major thrust of national plan and movement
- Focus on workhorses: public, urban, research, minority-serving institutions that are engaged with K-12
- STEM corporations also must change their approach
- Immigration + STEM

Recommendations for the Federal Government

- Holistic effort, akin to the National Defense Education Act
- Network of STEM Transformation Institutes
- GI BILL-like for STEM teachers
- Incentivize K-12, community college, and university collaboration
- Break the silos: NSF, ED, DOD, ENERGY, others

*Be Worlds
Ahead*