

STEM Readiness:

Preparing the Next Generation of STEM Professionals

National Trends: College Graduation Rates

Lackluster college graduation rates –

1. Fewer than 6 in 10 students who enroll in a 4 year college will earn a degree within 6 years.
2. Only 1 in 8 students who enroll in a 2 year college will successfully transfer and earn a bachelor's degree within 6 years

Source: National Center for Education Statistics (2015)

Significant disparities based on income & background –

1. 90% of college freshman from top income quartile will earn degree within 6 years; Only 11% of college freshman from lowest quartile will earn degree within 6 years
2. Across all individuals in 18- to 24-year age range, 54% of students from wealthy families earn degrees; 9% of students from poor families earn degrees.

Source: Pell Institute (2014)



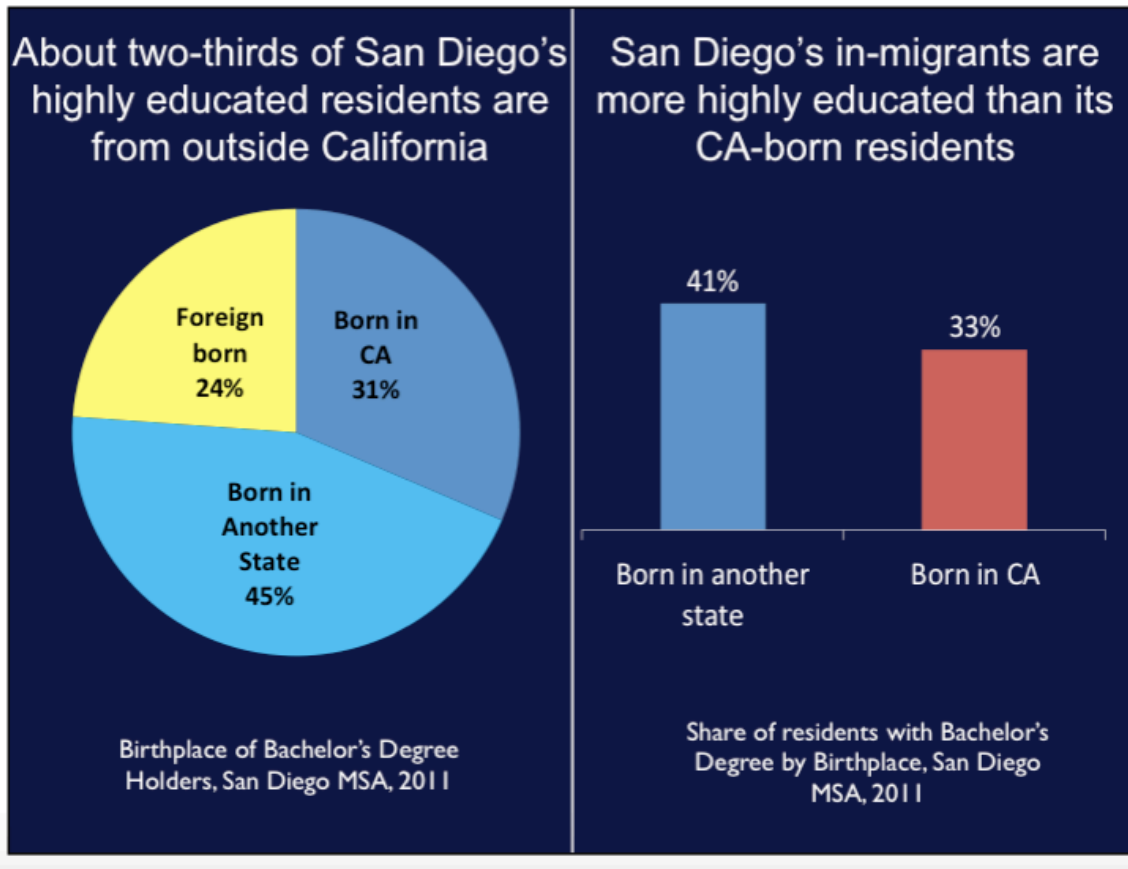
National Trends: STEM Readiness

1. Only 1.5% of 25-34 year olds enter the workforce with a STEM-focused degree.
2. High rates of attrition from STEM fields at the University level.
3. By 2020 we will have 1.5 million too few college graduates in STEM fields annually to meet employer demand.

Source: President's Council on Jobs and Competitiveness (2015)



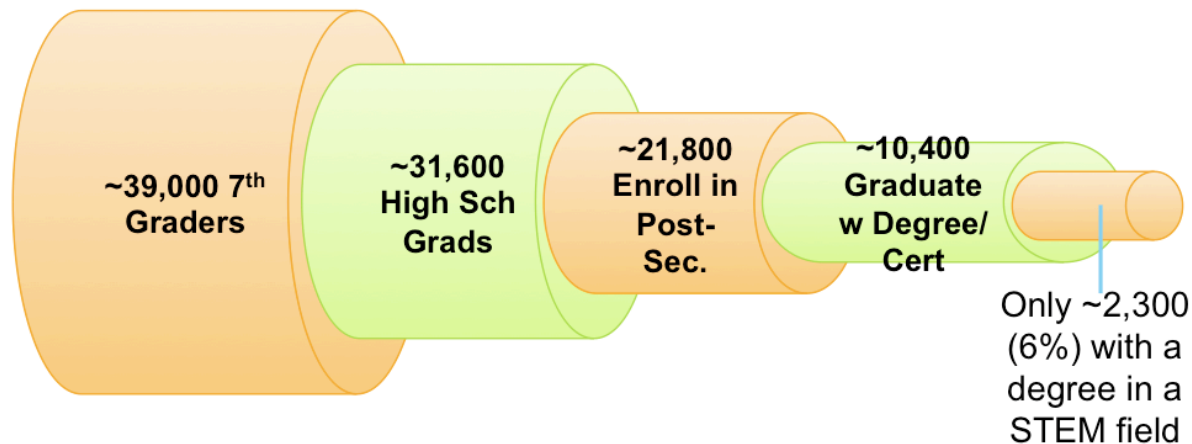
San Diego Trends: Degree Attainment



Source: Brookings Institute, 2014

San Diego Trends: STEM

SAN DIEGO'S WORK FORCE PIPELINE GETS *TOO THIN*



Brookings documented
~15,000 STEM job
openings per quarter in
SD County in 2013.



Sources: Education Synergy Alliance (2015) & San Diego County Office of Education (2014)

Behind the Numbers

- 1. Costs:** “Rich kids graduate, poor and working class kids don’t.” (Time Magazine, 2014)
- 2. College Readiness:** 1 in 4 students who enter post-secondary programs require remediation. (NCES, 2013)
- 3. Academic Hazing:** Intro courses and especially STEM instruction as a “rational sorting device.”
- 4. Uninspiring Teaching:**
 - *In college I feel like I’m sitting in a class and I’m learning about stuff that I don’t feel like I’m ever going to need.*
 - *I feel like in college there’s a lot of lecture, lecture, lecture and you don’t really get anything out of it.*
 - *For my first semester I kept on falling asleep in class. It isn’t that I wasn’t there to learn. It’s just that I was so bored that I kept on falling asleep.*



Innovations: High Tech High



HIGH TECH HIGH

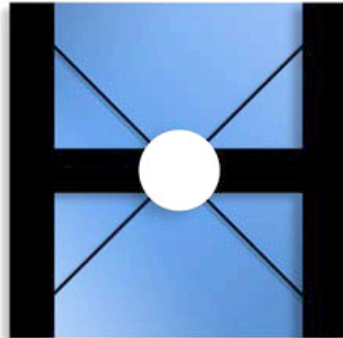
K-12 Schools

Graduate School

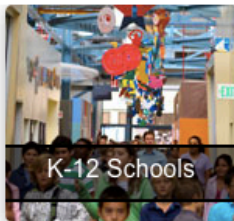
Projects

Videos

About Us



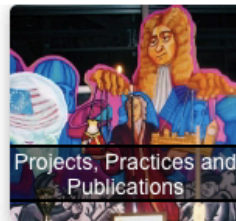
HIGH TECH HIGH



K-12 Schools



HTH Graduate School
of Education



Projects, Practices and
Publications

UnBoxed: Issue 14, Fall 2015
Read, Enjoy, and Participate!

Summer Institute
Sharing Best Practices
June 20-22, 2016



<https://vimeo.com/122502930>

Innovations: Linked Learning



LINKED LEARNING*

ABOUT
LINKED LEARNING

LINKED LEARNING
IN ACTION

GET
INVOLVED

POLICY

LINKED LEARNING
ALLIANCE

NEWS
& EVENTS

what is it?

how it works

how to get involved

Policy Convening 2016
[Learn More >](#)

Register your pathway in The Link
[Learn More >](#)

Search for Internships

<https://www.youtube.com/watch?v=gSdYD38dt8Y#t=31>

Innovations: Olin College of Engineering



Olin College
of Engineering

OUR
COMMUNITY

ADMISSION

ACADEMIC
LIFE

PROJECTS &
RESEARCH

COLLABORATE
WITH OLIN

A NEW KIND OF ENGINEERING COLLEGE

We believe that engineering is a creative enterprise that begins and ends with people and their desire for a better world.

> DISCOVER OLIN

<https://www.youtube.com/watch?v=KXNT-RRcfyo>

Innovations: San Diego Teaching Academy

Partnership:

- College for America – SNHU
- San Diego Unified School District
- Non-profit SDTA



Goals:

1. Teacher Development – Cultivate a new generation of innovative, dedicated educators who reflect the diversity of the K-12 students they serve.
2. College Access -- Provide relevant, responsive, and affordable higher education access for students from underrepresented communities.



Role of Philanthropy

“Our purpose here, then, is not to advocate for innovation for innovation’s sake. Rather a moral imperative exists in higher education. Yes, higher education needs to be more competitive and more cost conscious. But, ultimately a more innovative postsecondary industry will increase access to higher education, create a better educated workforce and enable more individuals to participate fully in in the democratic sphere.”

--Dominic Brewer & William G. Tierney,
Reinventing Higher Education: The Promise of Innovation, p. 14