KickStarter: Recasting your HSI as a Community of Innovation to Serve Latinx STEM Student Success

March 28, 2018
9:45 a.m. – 10:45 a.m.

Cynthia Pickering, Science Foundation Arizona
Stephanie Vasquez, Palo Alto College
Parvaneh Mohammadian, Los Angeles Mission College

Outline

- Why HSI and STEM?
- KickStarter Overview
- Community of Innovation (CI) Overview
- Case Study – Palo Alto College
- Case Study – Los Angeles Mission College
- Discussion/Q&A – Recasting your HSI as a CI

Why HSIs and STEM?

- By 2060, 33.5% of the under-18 population in the US will be Latinx (U.S. Census Bureau, 2016)

- Only15% of Latinx earn a Bachelors degree or higher (Pew Research Center, 2014)

- HSIs enroll 64% of all Latinx college students (Excelencia, 2017)

- Increasing demand for STEM workers far exceeds number of STEM degrees attained (Richard Tapia Center for Excellence and Equity, 2013)

- Latinx Students enrolling in STEM majors but not completing STEM degrees at par with other groups (Pew Research Center, 2014)

- 61% of Latinx STEM bachelors degree holders attended community College; 18% earned Associates degree prior to their Bachelors (New Directions in Institutional Research, 2010)

- HSIs "have the potential to increase the number of STEM degrees awarded to Hispanic students." (Crisp and Nora, 2014)

KickStarter Program (HRD#1450661)

- NSF-funded Pilot program, 4yr, $1.8M
- Assist community college HSIs *new to NSF* with STEM planning, concept development, *proposal preparation* and submission
- Desired outcomes:
  - More CC-HSIs compete successfully to win NSF proposals
  - CC-HSIs strengthen their STEM infrastructure
  - Key *partnerships* are established that improve competitiveness
  - KickStarter process is sustainable
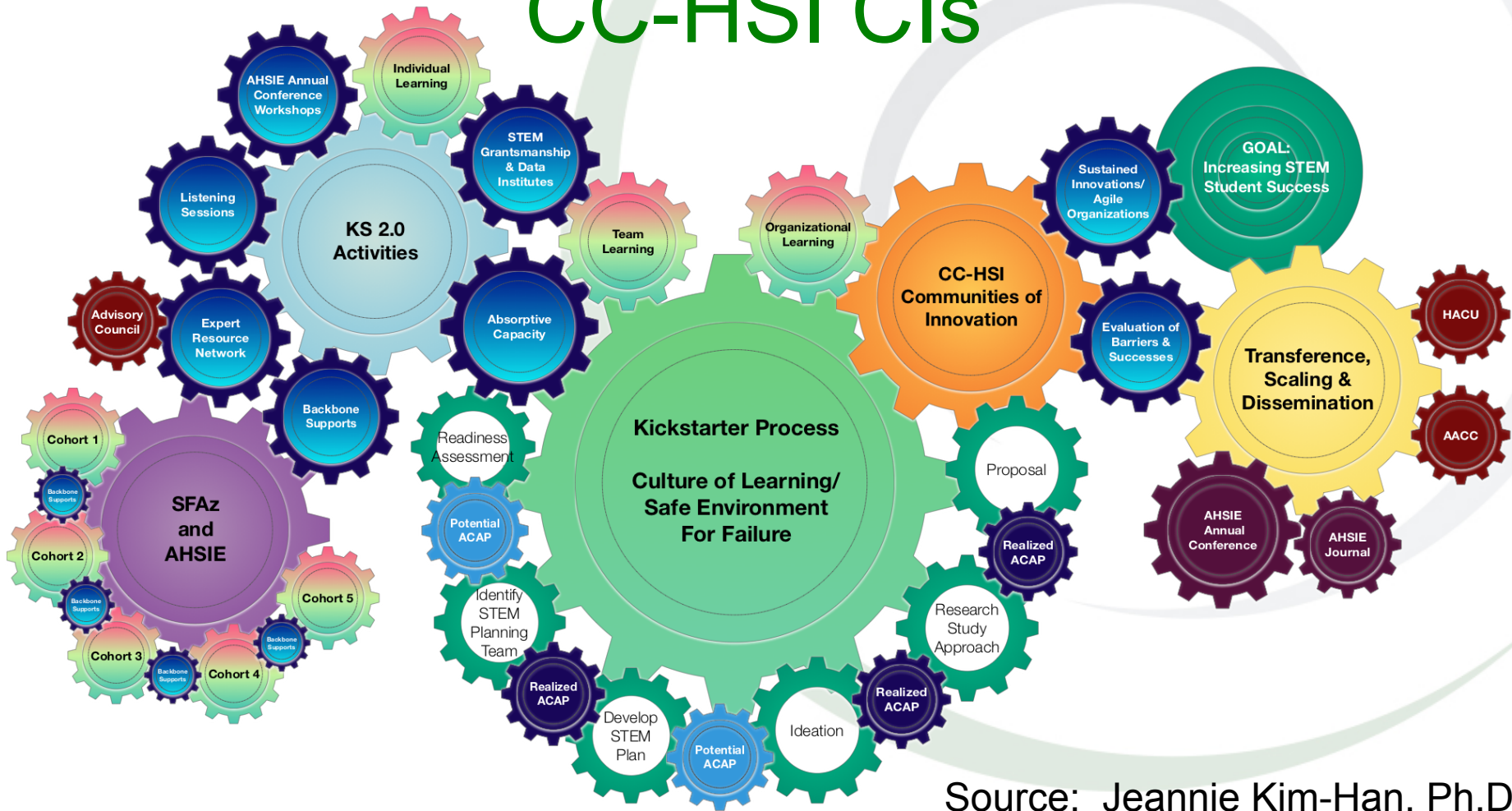
KickStarter Colleges

17 HSI 2-year colleges in 5 states
38% proposal success rate
$2.12M in NSF grants awarded

Cohort 1 – Established 2015
Cohort 2 – Established 2016
Cohort 3 – Established 2018
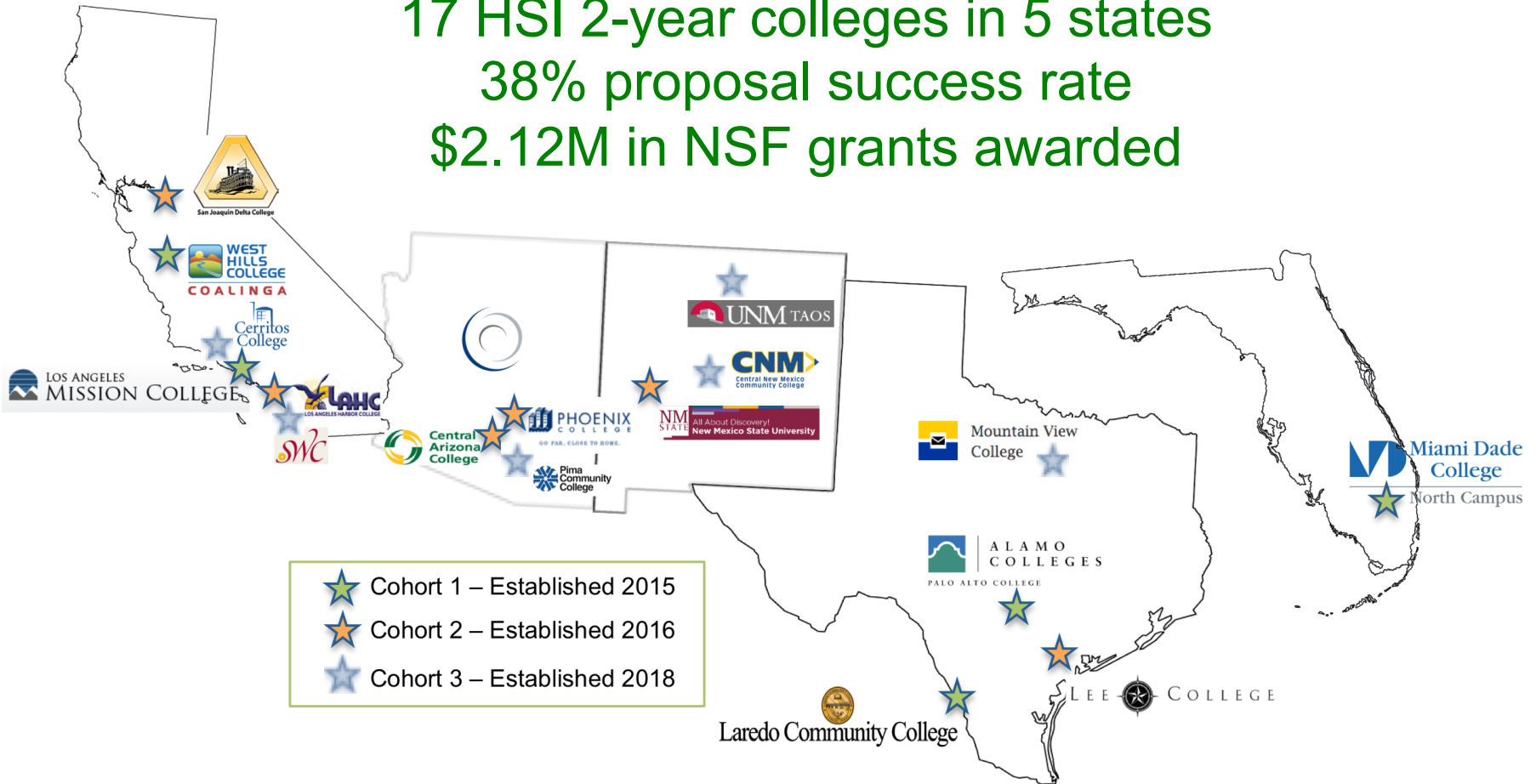
Repeatable KickStarter Process
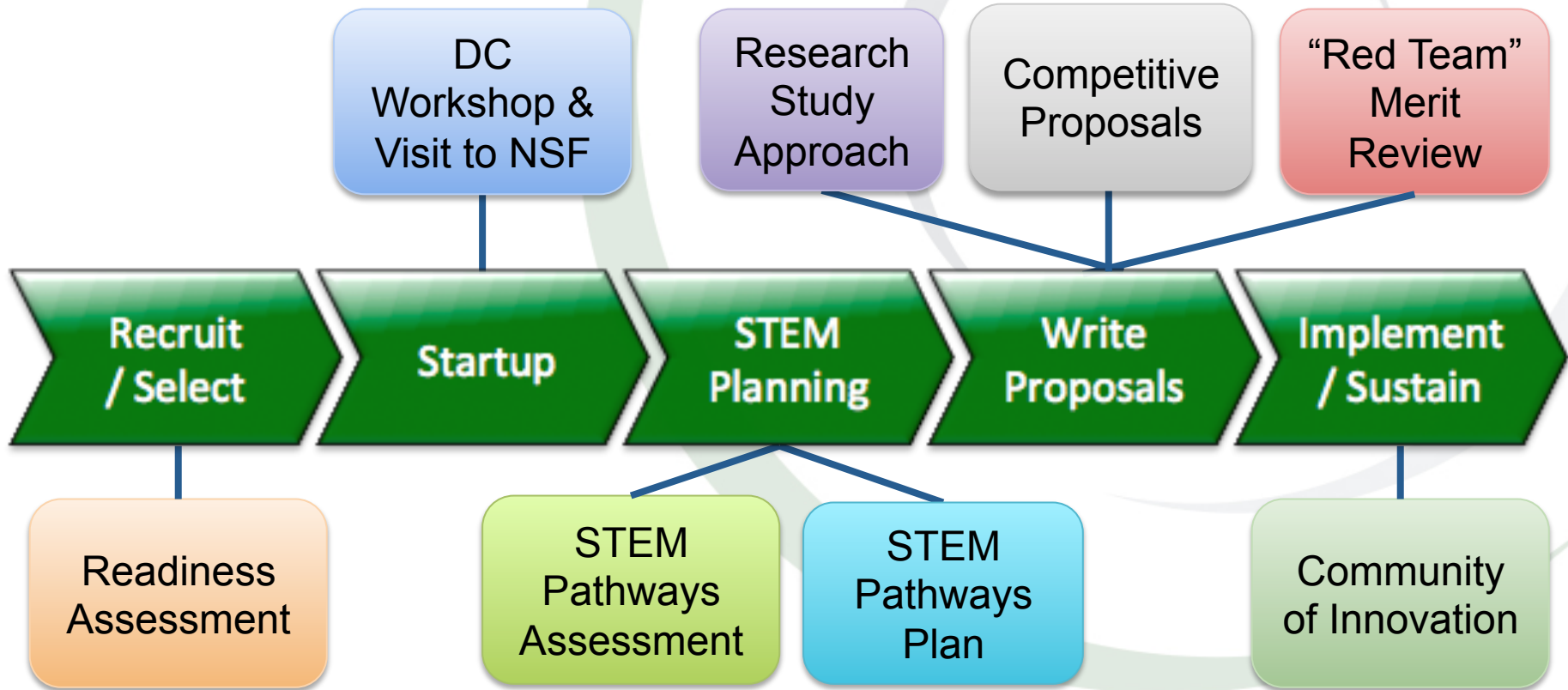
Formal Theory of Change Model for CC-HSI CIs

KickStarter Case Study
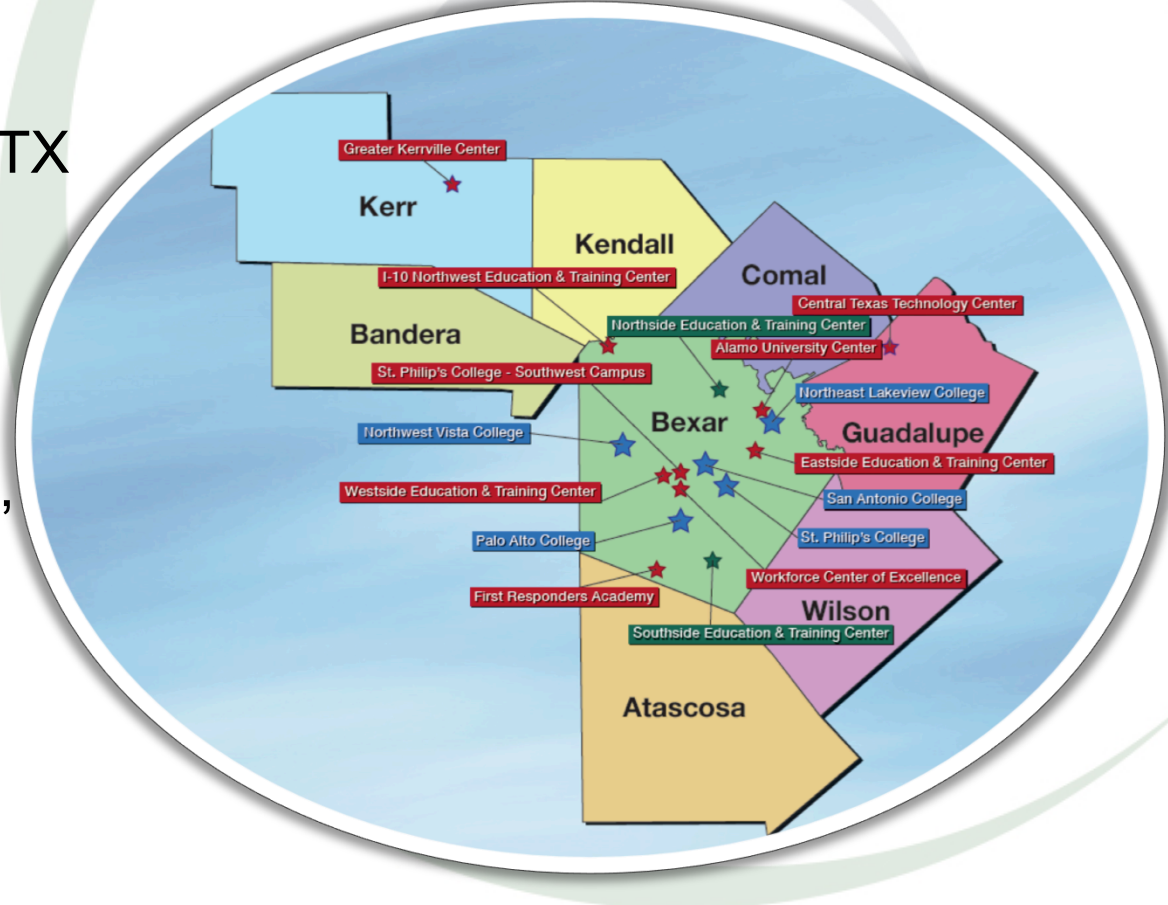
Presenter

Stephanie Vasquez

Director of College Grant Development

Palo Alto College

Service Area

- Located in San Antonio, TX
- Alamo Colleges District
- Over 9,000 students
- Bexar, Atascosa, Comal, Frio, Guadalupe, Karnes, Kendall, Medina, and Wilson counties

Campus Founding

- Pillar of south San Antonio and greater South Central Texas community since 1985

- Opening was realization of a community dream to build an institution of higher learning on the south side of San Antonio

- Over 30 years of operation: over 300,000 square feet of buildings across 126 acres located 15 minutes from downtown San Antonio

Institutional Profile

Snapshot of a Hispanic Serving Institution

Faculty & Staff

Faculty: Full-time-107; Part-time-126
Faculty ratios: Full-time-69.1%; Part-time-30.9%
Staff: Professional-74; Classified-63; Administrators-9
Gender: Female: 53.9%; Male: 46%
Ethnicity: Hispanic: 49.9%; White: 35.1%; African American: 5.9%; Asian: 1.6%; Other: 7.5%
Education: Doctorate degree: 10.7%; Master degree: 70.5%; Bachelor degree: 16.9%

Students

Fall 2016 Headcount: 9,108
Status: Full-Time: 19%; Part-Time: 81%
Gender: Male: 40%; Female: 60%
Ethnicity: Hispanic: 78%; African American: 3% White: 17%; 1% Asian; 1% Other
Economically Disadvantaged: 53%
Financial Aid: 62%
Remediation: 71%

Service Area

Median income is $22,784
Local school districts average economically disadvantaged rates of 81%
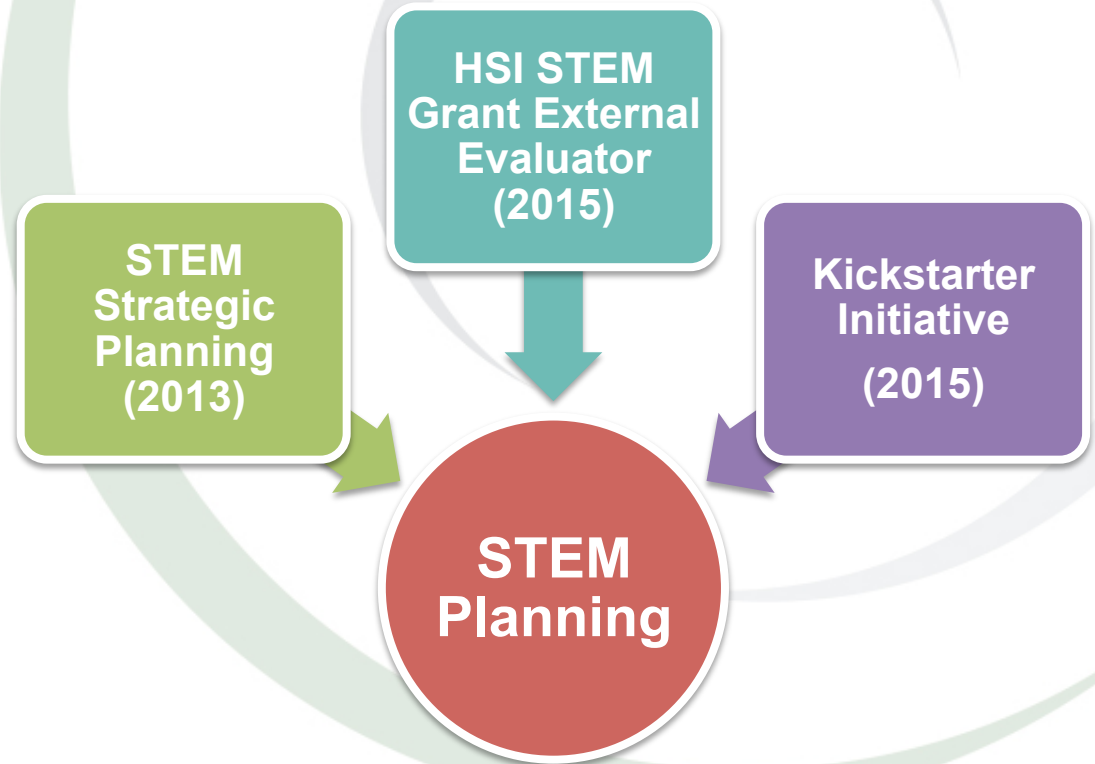94% of residents do not have beyond a bachelor's degree
44.3% speak a language other than English at home
63.3% of residents are Hispanic

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COMMUNITY COLLEGE STEM PATHWAYS
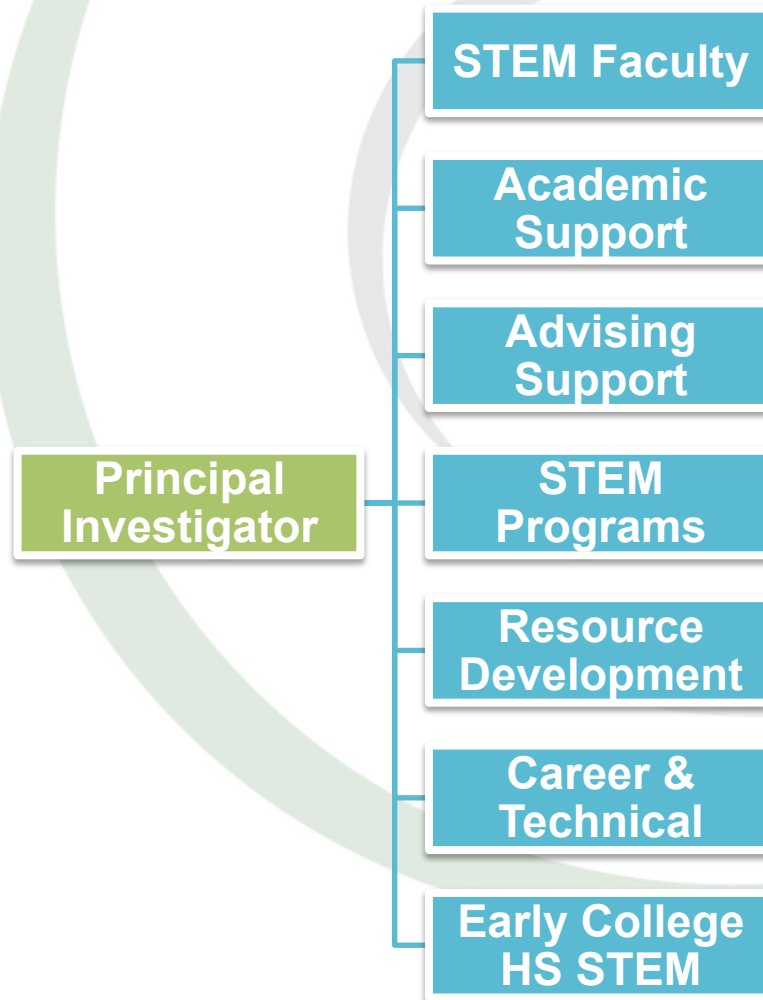LED BY SCIENCE FOUNDATION ARIZONA

Our KickStarter Experience

- Part of Cohort 1
- Prior success with Department of Education STEM funding
- Leveraged college efforts and KickStarter Program to inform a STEM Plan

STEM Strategic Planning (2013)

HSI STEM Grant External Evaluator (2015)

Kickstarter Initiative (2015)

STEM Planning

PAC KickStarter Team

- Cross-college representation for STEM planning input

	STEM Faculty
	Academic Support
	Advising Support
Principal Investigator	STEM Programs
	Resource Development
	Career & Technical
	Early College HS STEM

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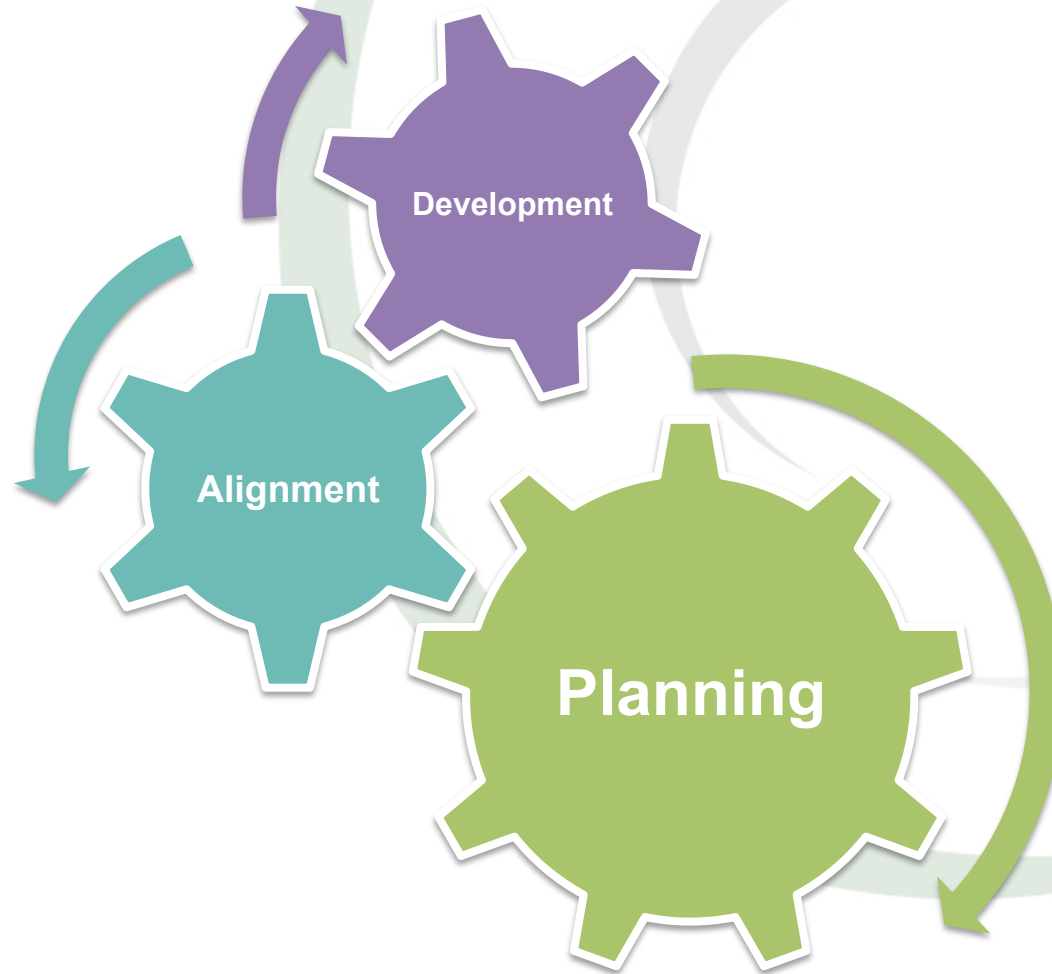
Outcomes from Participating

STEM Pathways Model	➡	**STEM Pathways Assessment**	➡	**STEM Priority Areas**

- College-wide STEM plan established with cross-college input

- Faculty engagement in leading three NSF proposals

- Network for STEM resources expanded

- Successful new STEM grant awards: Dept. of Ed. HSI STEM, Dept. of Ed. Trio Upward Bound Math Science, NSF S-STEM

- Identified key areas for improvement that are being addressed through grant programs and college efforts

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Key Highlights

- Red Team Review is a beneficial learning process for proposal development and understanding the NSF perspective

- Connections with NSF program officers, mentors, external evaluators are extremely useful and necessary

- Support of institutional administration is spearheading the KickStarter process key

- Reinforced strategy to pursue grant and programs that meet the needs of our college and students – let our needs drive the what funding opportunities we seek

Lessons Learned

- Determine a cycle for review and conducting the KickStarter assessment again

- Determine process for expanding and maintain faculty engagement

- Currently working on pursuing more NSF opportunities while being mindful of internal capacity

- First NSF award, S-STEM Program, being implemented this year with a focus on undergraduate research across disciplines – be ready to implement!

Serving our Students in STEM

- Identified short and long term areas for improvement

- Industry connections, partnerships with community and four – year institutions, undergraduate research, career experiences

- Increased engagement in and understanding of STEM efforts at PAC

KickStarter Case Study

Dr. Par Mohammadian
Life Sciences Faculty & PI

Introduction

❖ Located in Sylmar, CA

❖ One of ninth colleges within
Los Angeles Community
College District

LAMC FALL 2017 STUDENT PROFILE

Enrollment: 11,150

| Gender		Ethnicity	
Female	61.2%	Hispanic	79.3%
Male	38.8%	White	10.4%
		Asian	4.3%
Age		Black	2.6%
Under 18	10.8%	Multiethnic	1.5%
18-21	35.2%	Native American	0.1%
22-25	20.7%	Other/Unknown	1.7%
26-30	11.8%	**Financial Aid Recipients by Ethnicity**	
31-40	10.2%	Hispanic	73.3%
Over 41	11.3%	White	12.1%
Credit Load (credit students only)		Asian	5.3%
Less than 12 units (part-time)	76%	Black	4.2%
12 or more units (full-time)	24%	Other/Unknown	5.1%

DROP OUT RISK FACTORS

❑ Students come from families with **low socioeconomic** status.

❑ **Work** schedules mean that students are more likely to be **enrolled in college part-time**, which is a **risk factor** in degree completion.

❑ Students often get sidetracked into a **job** providing short-term economic success rather than transferring to a four-year institution.
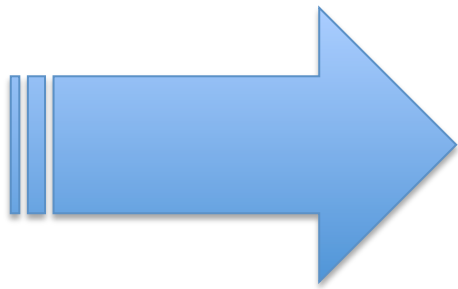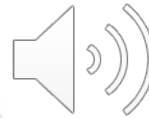
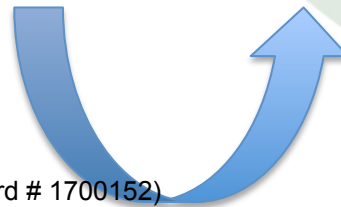Stackable Certificate and Degree Programs in Biotechnology
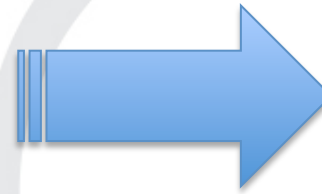
Short-term certificates -> employment - Continue with education

Support to offer the programs

NSF grant

KickStarter

(NSF ATE award # 1700152)

Advantages of being part of Cohort #1:

➢ Trip to Washington DC to learn about different NSF programs

➢ Campus visit to identify the current resources and gaps

➢ Assist in identifying the type of NSF grants we should apply to

➢ Assist in the process of grant writing

➢ Introduction to other PIs who later served as mentors

(NSF ATE award # 1700152)

Outcome of being part of Cohort #1:

➢ Increasing the Student Biotech Pipeline (NSF ATE award # 1700152) (May 01, 2017 – April 30, 2010)

➢ Biotech students submitted to NSF Community College 2018 Innovation project in February 2018

➢ NSF HSI submission in March 2018

➢ NSF S-STEM submission in March 2018

(NSF ATE award # 1700152)

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KickStarter Program (HRD#1450661)

- High Touch consulting, self-service resources, and networking opportunities (cohort model) helped institutions to:
  - ✓ Build STEM Strategic Plans
  - ✓ Strengthen STEM infrastructure
  - ✓ Establish key *partnerships*
  - ✓ Sustain proposal development capabilities
- Organic Communities of Innovation emerged at HSIs
  - "KickStarter has helped the administration (of my college) recognize the importance of developing partnerships and so I feel they are now placing more of an emphasis on allowing staff and faculty to engage with our 4-year institutions."

  - "KickStarter has helped the faculty and staff recognize that industry partnerships are critical for our students and that we must proactively work toward developing connections that will help our students receive internships."

Thank You!!

- Cynthia Pickering – cpickering@sfaz.org
- Stephanie Vasquez - svasquez117@alamo.edu
- Par Mohammadian – mohammp@lamission.edu

- Related sessions at AHSIE 2018
  - 3/25/18 1:00 p.m. - 5:00 p.m. Grantsmanship Institute
  - 3/26/18 11:00 a.m.-12:00 p.m. Resources, Strategies, and Funding Opportunities for HSIs at NSF
  - 3/27/18   3:15 p.m. - 4:30 p.m. Creating a Community of Innovation and Culture of Change: Embracing HSI Identity