Academy for College Excellence GIS/Data Analysis & Strategic Plan

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Updated Analysis, Summer 2010
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Outline of Slide Deck:

1. ACE GIS Study: 80% of community college students are served by 20% of community colleges (slides 3-15)

2. ACE Strategic Plan metropolitan areas - plan developed with FSG Social Impact Advisors (slides 16-18)

3. Appendix 1: Comparison of metro-areas in GIS study with metro-areas in ACE strategic plan (slides 19-22)

4. Appendix 2: GIS Study - Data Sources and Methods (slides 23-37)

5. Appendix 3: FSG Analysis – Prioritization Method (slides 38-42)

1. ACE GIS Study

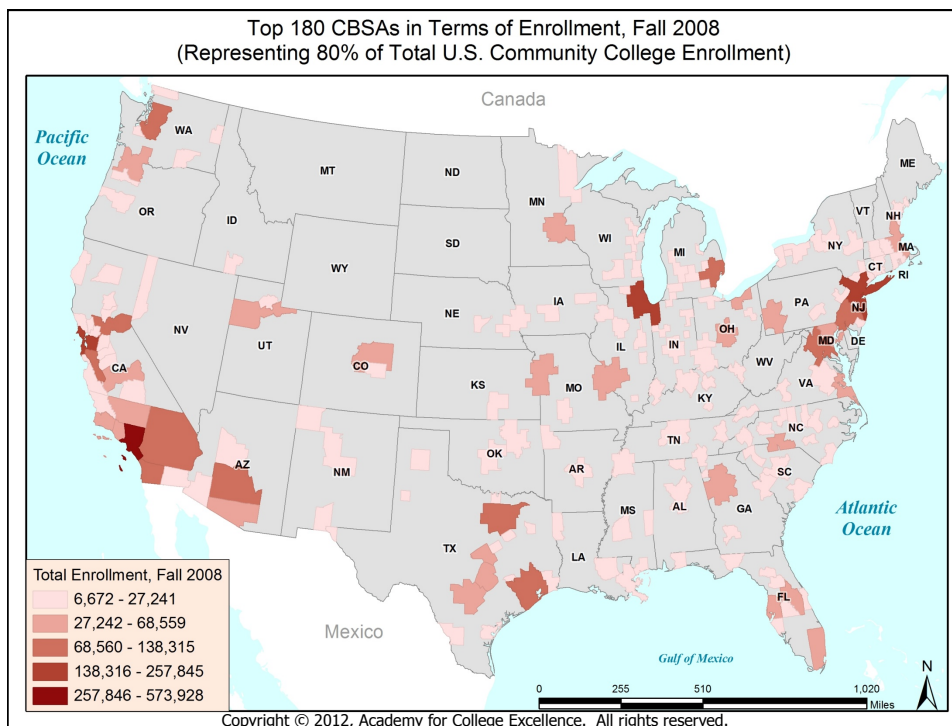# Findings:

All Public 2-Year Schools

- The metropolitan level is a more effective geographic scale for thinking about roll-out of the ACE program

- The following **180 CBSAs** (19%), which contained 80% of enrollment in 2008, will be considered for further analysis

- Consider factors like Persons in Poverty, Children in Poverty, Crime, and Unemployment to select the metropolitan areas

Top 180 CBSAs in Terms of Enrollment, Fall 2008
(Representing 80% of Total U.S. Community College Enrollment)

Total Enrollment, Fall 2008
- 6,672 - 27,241
- 27,242 - 68,559
- 68,560 - 138,315
- 138,316 - 257,845
- 257,846 - 573,928

Full Set of Factors Considered:

- Community college enrollment (total, full-time, part-time, full-time-equivalent)
- Population
- Persons in poverty
- Children (< 18 years in 2008) by age group as broad projections of future college-age populations
  - less than 5 years
  - 5 to 9 years
  - 10 to 17 years
- Children in poverty
- Unemployment
- Crime (incidents)
- Persons age 25+ with less than a college education

Three Factors:

- **Community college enrollment** (**total**, full-time, part-time, full-time-equivalent)
- Population
- Persons in poverty
- Children (< 18 years in 2008) by age group as broad projections of future college-age populations
  - less than 5 years
  - 5 to 9 years
  - 10 to 17 years
- **Children in poverty**
- Unemployment
- **Crime (incidents)**
- Persons age 25+ with less than a college education

# Simple Exercise: Top 20% of CBSAs
All Public 2-Year Schools

If we instead cut to the top 20% across the same three factors as above we…

- Get 28 CBSAs (16 on top of the 12 above)

- Account for:
  - 47% of all community college enrollment in fall 2008
  - 39% of all full-time enrollment
  - 50% of all part-time enrollment
  - 46% of all full-time-equivalent enrollment

- Span across 27 states

Top 28 CBSAs for ACE Roll-Out Based on Total Enrollment (Top 20% of 180 Across Three Factors) Ranked by Total Community College Enrollment, Fall 2008
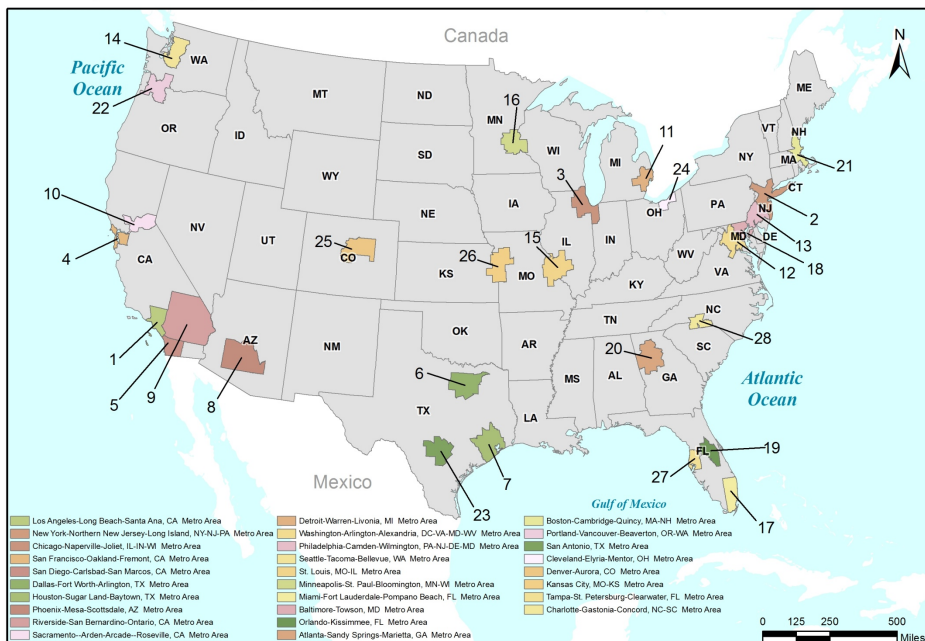
Summary of findings:
All Public 2-Year Schools

- If we consider those CBSAs of the initial 180 that rise to the top 10% and 20% in terms of each of the three factors (total enrollment, child poverty, and crime) independently, we get 12 and 28 CBSAs, respectively

- These metros accounted for 32% and 48% of total community college enrollment in fall 2008, respectively – over half of the 80% accounted for by the initial 180

- Across the top 12 and 29 CBSAs, there are generally relationships that support using total community college enrollment to rank among the top CBSAs for roll-out of the ACE program

2. ACE Strategic Plan: Selected Metro-Areas

(analysis performed by FSG Social Impact Advisors using ACE GIS study)

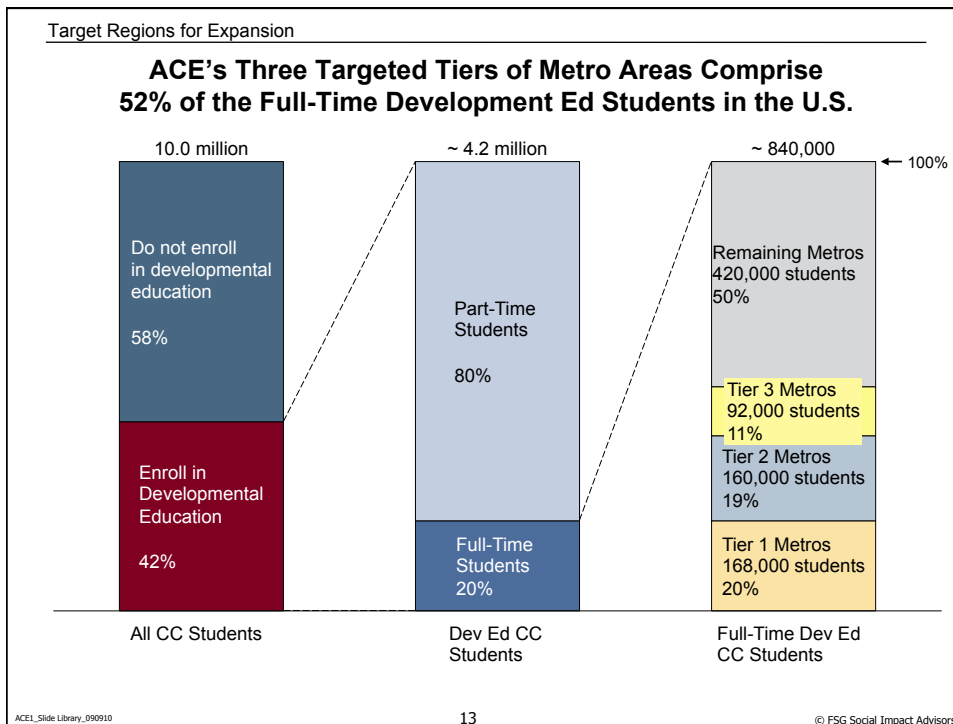Target Regions for Expansion

| Figure 1 |
| In StratPlan |

ACE Will Target Metro Areas with a Tiered Strategy, Investing More Heavily on Outreach to the Most Attractive Metro Areas

Tier 1: Highest Potential

- Dallas, TX
- Houston, TX
- Los Angeles, CA
- New York, NY
- San Fran., CA
- Seattle, WA

These regions contain the majority of students & are critical to gaining national funds. Send RFP and invest heavily to cultivate demand: offer matching funds, conduct marketing, use ACE labor hours.

Tier 2: High Potential

- Baltimore. MD
- Chicago, IL
- Kansas City, KS
- Minneapolis, MN
- Phoenix, AZ
- Portland, OR
- Riverside, CA
- Sacramento, CA
- San Diego, CA
- San Jose, CA
- St. Louis, MO
- Washington D.C

These regions have large student populations and strong support. Send RFP and as resources are available, reach out to assess local demand and support for ACE. On a limited basis, offer matching funds, conduct marketing, and use ACE labor hours.

Tier 3: Moderate Potential

- Atlanta, GA
- Austin, TX
- Bakersfield, CA
- Boston, MA
- Charlotte, NC
- Cleveland, OH
- Denver, CO
- Detroit, MI
- Miami, FL
- Norfolk, VA
- Orlando, FL
- Philadelphia, PA
- Pittsburgh, PA
- San Antonio, TX

These metros are *nearly* large enough, dense enough, or well-supported enough to field a mature ACE program. Send them an RFP and let them prove that they can and will make the investments necessary to field ACE programs at their campuses. Consider fast tracking fees to offset the costs of expanding to sub-scale metros.

Differential investment

Strategic Targeting of High Impact Regions

Competitive RFP to all promising metro areas

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Target Regions for Expansion

**ACE's Three Targeted Tiers of Metro Areas Comprise
52% of the Full-Time Development Ed Students in the U.S.**

10.0 million   ~ 4.2 million   ~ 840,000   ← 100%

Do not enroll
in developmental
education

58%

Part-Time
Students

80%

Remaining Metros
420,000 students
50%

Tier 3 Metros
92,000 students
11%

Tier 2 Metros
160,000 students
19%

Enroll in
Developmental
Education

42%

Full-Time
Students
20%

Tier 1 Metros
168,000 students
20%

All CC Students   Dev Ed CC   Full-Time Dev Ed
                           Students   CC Students

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3. Appendix 1:

Comparison of GIS Study with FSG Priority Metro-Areas

Comparison with FSG Priority Metros

- FSG Social Impact Advisors carried out a thorough analysis to prioritize metropolitan areas for ACE roll-out

- Below we compare the metros identified in that analysis with those identified above across several important demographic and socio-economic measures at the regional level

Comparison with FSG Priority Metros

ACE Analysis:	FSG Analysis:
Stage 1 ■ Total student population ■ Separate analysis for the Remedial Education Subset Stage 2 ■ Total enrollment ■ Various SES measures at metro level	Stage 1 ■ Total student population ■ # of campuses of adequate size Stage 2 ■ Philanthropic priorities for investment in higher education ■ Regional commitment to completion-focused developmental education policy ■ Relative size of student population

Comparison with FSG Priority Metros

List of all CBSAs Identified by FSG and ACE Metro Analysis

CBSA Name	FSG TIER	All Public 2-yr Schools Analysis	Remedial Education Subset Analysis
New York-Northern New Jersey-Long Island, NY-NJ-PA	1A	Top 10%	Top 10%
Los Angeles-Long Beach-Santa Ana, CA	1A	Top 10%	Top 10%
Dallas-Fort Worth-Arlington, TX	1A	Top 10%	Top 10%
Houston-Sugar Land-Baytown, TX	1A	Top 10%	Top 10%
San Francisco-Oakland-Fremont, CA	1A	Top 10%	Top 20%
Seattle-Tacoma-Bellevue, WA	1A	Top 20%	Top 20%
Phoenix-Mesa-Scottsdale, AZ	1B	Top 10%	Top 10%
Chicago-Naperville-Joliet, IL-IN-WI	1B	Top 10%	Top 10%
Washington-Arlington-Alexandria, DC-VA-MD-WV	1B	Top 10%	Top 10%
Riverside-San Bernardino-Ontario, CA	1B	Top 10%	Top 10%
Minneapolis-St. Paul-Bloomington, MN-WI	1B	Top 20%	Top 20%
Baltimore-Towson, MD	1B	Top 20%	Top 20%
San Diego-Carlsbad-San Marcos, CA	1B	Top 20%	Top 20%
St. Louis, MO-IL	1B	Top 20%	Top 20%
Kansas City, MO-KS	1B	Top 20%	Not Identified
Portland-Vancouver-Beaverton, OR-WA	1B	Top 20%	Top 20%
Sacramento--Arden-Arcade--Roseville, CA	1B	Top 20%	Top 20%
San Jose-Sunnyvale-Santa Clara, CA	1B	Not Identified	Not Identified
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	2	Top 10%	Top 10%
Miami-Fort Lauderdale-Pompano Beach, FL	2	Top 10%	Top 20%
Detroit-Warren-Livonia, MI	2	Top 10%	Top 20%
Atlanta-Sandy Springs-Marietta, GA	2	Top 20%	Not Identified
Boston-Cambridge-Quincy, MA-NH	2	Top 20%	Top 20%
San Antonio, TX	2	Top 20%	Top 20%
Orlando-Kissimmee, FL	2	Top 20%	Top 20%
Charlotte-Gastonia-Concord, NC-SC	2	Top 20%	Not Identified
Denver-Aurora, CO	2	Top 20%	Top 20%
Cleveland-Elyria-Mentor, OH	2	Top 20%	Top 20%
Virginia Beach-Norfolk-Newport News, VA-NC	2	Not Identified	Not Identified
Austin-Round Rock, TX	2	Not Identified	Not Identified
Bakersfield, CA	2	Not Identified	Not Identified
Pittsburgh, PA	2	Not Identified	Not Identified
Tampa-St. Petersburg-Clearwater, FL	Not Ident	Top 20%	Not Identified

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4. Appendix 2:

GIS Study - Data Sources & Methods

Data Sources: Phase 1

- The Integrated Postsecondary Education Data System (IPEDS), from the National Center for Education Statistics
  - Information collected from the 2008-2009 school-year for all 1,135 active public 2-year institutions in the U.S.

- GIS "shapefiles" and other geographic information from the U.S. Census Bureau
  - A shapefile for Core-Based Statistical Areas *(CBSA)*
  - A shapefile for Zip Code Tabulation Areas (ZCTAs)
  - A correspondence table between postal ZIP codes and the census' ZCTAs

Data Sources: Phase 1 (cont.)

- The 2008 American Community Survey (ACS)
  - CBSA-level data on total population, age structure, poverty and poverty by age group, unemployment, and educational attainment for the population age 25+ for the entire U.S.

- The State of the Cities Database from the U.S. Department of Housing and Urban Development
  - 2007 CBSA-level data on crime incidents/rates from FBI

What is a CBSA?

- The **Core Based Statistical Area (CBSA)** is the current definition of "regions" used by the U.S. Census Bureau, developed in 2000 and put into effect in June 2003 (updated annually)

- Includes both *metropolitan* and *micropolitan* statistical areas – metropolitan areas need an urban core of at least 50,000 people, micropolitan need a core of only 10,000 people

- In 2008, there were 374 Metropolitan and 579 Micropolitan statistical areas in the U.S.

- For the most part, they are groupings of one or more counties

Methods: Phase 1

- Identify the *remedial education subset*
  - Use information on remedial course offerings, full-time (FT) and full-time-equivalent (FTE) enrollment to tag schools that are not likely to have many remedial students
  - Remove these schools from the set of all active public 2-year institutions to get the *remedial education subset*

Methods: Phase 1 (cont.)

- Aggregate Institution-level information for all public two-year institutions, and the remedial education subset, to the CBSA level
  - Reported postal zip codes were used to identify the CBSA for the 147 institutions with a missing CBSA code
  - State level aggregations made as well for comparative purposes

- Identify the CBSAs that account for:
  - 80% of public 2-year enrollment
  - 80% of enrollment among the remedial education subset

Methods: Phase 1 (cont.)

- Examine several important demographic and socio-economic measures across the CBSAs identified above

- Identify a set of CBSAs that rank highest in terms of relevant factors*

- Develop a ranking of this set of CBSAs to prioritize roll-out*

*Done separately for CBSAs identified based on the remedial education subset

The Remedial Education Subset

- No direct information on the number of students taking remedial courses by school available in the IPEDS data
  - Includes a question on whether schools offer remedial courses

- Explored other sources
  - The best survey to get at the # of students taking remedial courses by school is the National Postsecondary Student Aid Study (NPSAS:08): Student Financial Aid Estimates for 2007–08
  - Not publicly available

The Remedial Education Subset

- Thus, in the remedial education subset we include all schools that:

  - Report offering remedial courses
    - *Schools that report **not** offering remedial course are excluded (mostly vocational, technical, military, or state colleges)*

  - Have a ratio of Full-Time (FT) to Full-Time-Equivalent (FTE) enrollment that is within the *normal range* for public 2-year schools that offer remedial courses

Exploring the FT/FTE Ratio

- The ratio of FT/FTE enrollment is a useful indicator of remedial enrollment:

  - Schools that report offering remedial courses have an average FT/FTE ratio of **0.67**, while schools that report *not* offering remedial courses have an average FT/FTE ratio of **0.74**

  - The implication is that schools with a *lower* FT/FTE ratio should tend to have a *higher* share of remedial students

Exploring the FT/FTE Ratio

- There is considerable variation in the FT/FTE ratio, even across schools that report offering remedial courses

Histogram
Schools that Report Offering Remedial Courses

Mean = 0.6718
Std. Dev. = 0.13155
N = 962
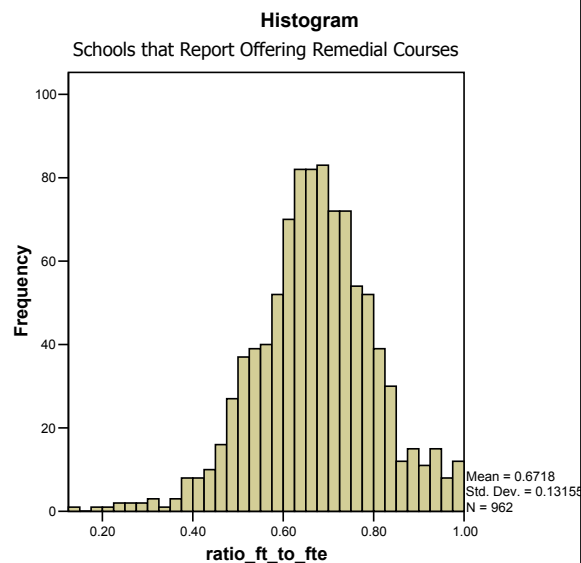
Exploring the FT/FTE Ratio

- We decided to exclude schools with a FT/FTE ratio of greater than 0.875 from the remedial education subset

Histogram

Schools that Report Offering Remedial Courses

Remedial Education Subset

Mean = 0.6718
Std. Dev. = 0.13155
N = 962

ratio_ft_to_fte
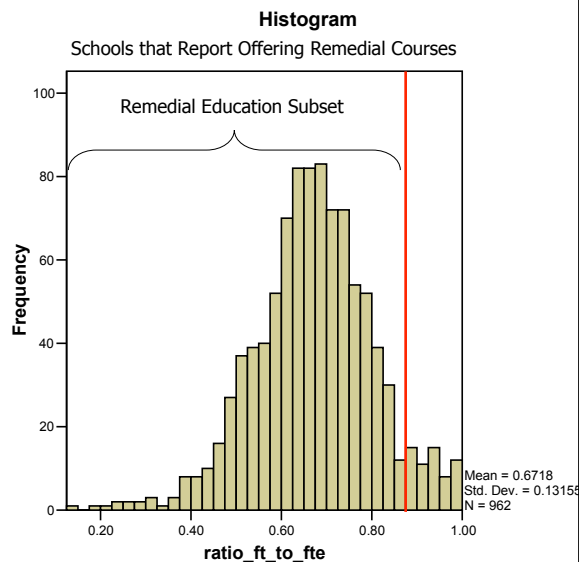
The Remedial Education Subset

Comparison of Remedial Eductation Subset to Other Schools

	All Public 2-Year Schools	Remedial Education Subset	Implied Non-Remedial
Number of Schools, 2009 (% of total) (% of Total)	1134 (100%)	901 (79%)	233 (21%)
Total Enrollment, Fall 2008 (% of Total)	6,695,444 (100%)	6,128,794 (92%)	566,650 (8%)
Ratio of FT to FTE Enrollment	68%	65%	79%
Retention Rate (All)	52%	51%	58%
PT Retention Rate	42%	40%	50%
FT Retention Rate	58%	57%	62%
Percent Non-White Students	36%	38%	32%
Percent Students Ages 18-24	51%	51%	55%

Source: Authors analysis of data from IPEDS.
Note: Reported percentages are unweighed averages across all schools indicated.

How is Crime Defined?

Our measure of incidents of crime includes 2007 counts of:

- Murder
- Rape
- Robbery
- Aggravated assault
- Burglary
- Larceny
- Motor Vehicle Theft

Does Size Matter?

- From a perspective of attempting to reach a larger "at risk" population, yes…

  ➢ Thus, we consider all of the measures in terms of absolute values rather than rates, under the assumption that in many U.S. CBSAs, populations neighborhoods described by most of the above characteristics tend to be more concentrated in urban areas – where institutions adopting the ACE would be located

5. Appendix 4:

FSG Prioritization Method

Target Regions for Expansion

FSG Used a Staged Funnel Approach to Selecting Target Metro Areas

570 metro areas in 50 states
- 10 million students
- 840,000 FT DE students (est.)
- 1400+ campuses

Stage 1

Stage 2

Tier 3 Metro Areas

Tier 1 Metro Areas

Tier 2 Metro Areas

Stage 1 Criteria

1.a: Is the metro's overall student population large enough to support a mature ACE program?

1.b: Are there enough campuses (more than 6) within the metro to support a mature ACE program?

1.c: Are there enough campuses that are each large enough to support a mature ACE program within the metro area?

Stage 2 Criteria

2.a: Is the metro in a state that is a Gates Foundation priority state?

2.b: Is the metro a priority for national & local philanthropies active in higher education?

2.c: Has the metro's state demonstrated commitment to completion-focused dev. ed. policy?

2.d: What is the relative size of the metro's student population compared to the other metros in Stage 2?

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Target Regions for Expansion

Stage 1: Which Metros Are Large Enough and Have Campuses Large Enough to Field a Fully Mature ACE Program?

Stage 1

1.a: Is the metro's overall student population large enough to support a mature ACE program?	• A metro area must have *at least* 57,600 total students per year, on average, to have enough full-time developmental education students to support a full ACE Program[1]	• 30 metros with over 400k FT DE students* have 57,600 or more students
1.b: Are there enough campuses within the metro to support a mature ACE program?	• A metro area must have *at least* 6 campuses to support a full ACE program as planned. This will give ACE a choice of which campuses to partner with, and create a large community of practice[1]	• 28 metros with over 400k FT DE students* have 6 campuses and meet criteria 1.a
1.c: Are there enough campuses that are each large enough to support a mature ACE program within the metro area?	• A campus must have *at least* 9,600 total students per year, on average to have enough full-time developmental education students to support a full ACE Program[1]	• 10 metros with over 250k FT DE students* have 6 or more campuses that *each* have enough students, and meet criteria 1.a and1.b • 8 more metros, with over 73k more FT DE students* have 6 campuses that *on average* each have enough students, and meet criteria 1.a & 1.b

Note: (1) See next slide for assumptions used to estimate thresholds for metro & campus size, and number of full-time dev. ed. students

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Target Regions for Expansion

Stage 1: How Big Is Big Enough?

How many students does a metro area or an individual campus need to support a mature ACE program?

Stage 1

Measurement		Value	Source
ACE Students per Cohort		30	ACE Strategic Decision[1]
Cohorts per Campus per Semester	x	9	ACE Strategic Decision
Semesters per Year	x	2	ACE Strategic Decision
ACE Students per Campus per Year	=	540	Calculated from items above
Penetration rate of FT DE Students	÷	67%	Assumption: Ace historical rate of 50% plus more aggressive expansion in future
FT DE Students per Campus per Year	=	806	Calculated from items above
FT DE Students as % of DE Students	÷	20%	Assumption: Based on Cabrillo FT DE students, national average FT attendance
DE Students per Campus per Year	=	4,030	Calculated from items above
DE Students as % of Students	÷	42%	Assumption: National Center for Education Statistics, 2008
Minimum Students per Campus per Year	**=**	**9,600**	Calculated from items above
Campuses per Metro	x	6	ACE Strategic Decision[2]
Minimum Students per Metro per Year	**=**	**57,569**	Calculated from items above

Note: (1) Since the analysis was conducted, ACE has since found the average to be closer to 25 students per cohort. However, the 30 students per cohorts was kept in the analysis to keep a high bar for filtering top tier metro areas (2) ACE expects to expand to 10 campuses per metro area *on average*, thus the minimum cut-off was set lower since we expect larger metro areas to have more than 10 cohorts

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Target Regions for Expansion

18 metro satisfy the Stage 1 criteria
14 more metros *nearly* satisfy the Stage 1 criteria

Stage 2

● Tier 1 Metros: metro areas that <u>pass Stage 1 & 2</u>
• Dallas, TX
• Houston, TX
• Los Angeles, CA
• New York City, NY
• San Francisco, CA
• Seattle, WA

● Tier 2 Metros: metro areas that <u>pass only Stage 1</u>
• Baltimore. MD
• Chicago, IL
• Kansas City, KS
• Minneapolis, MN
• Phoenix, AZ
• Portland, OR
• Riverside, CA
• Sacramento, CA
• San Diego, CA
• San Jose, CA
• St. Louis, MO
• Washington D.C.

● <u>Tier 3 Metros: metro areas that nearly satisfy Stage 1 criteria</u>
• Atlanta, GA
• Austin, TX
• Bakersfield, CA
• Boston, MA
• Charlotte, NC
• Cleveland, OH
• Denver, CO
• Detroit, MI
• Miami, FL
• Norfolk, VA
• Orlando, FL
• Philadelphia, PA
• Pittsburgh, PA
• San Antonio, TX