

Impact of Unemployment on Community College Enrollment

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Acknowledgements

Thanks to John Roach, Foundation for California Community Colleges, for supplying data about community colleges, and Matthew Gardner and Travis Miller of BayBio for providing data about biotech firms.

Objective

To determine factors that account for community college enrollment, especially economic variables (e.g., unemployment rate)

Presentation is more descriptive than analytical.

Geography of Presentation

- Statewide
- San Francisco Bay Area
- Santa Clara County

(mostly driven by data considerations)

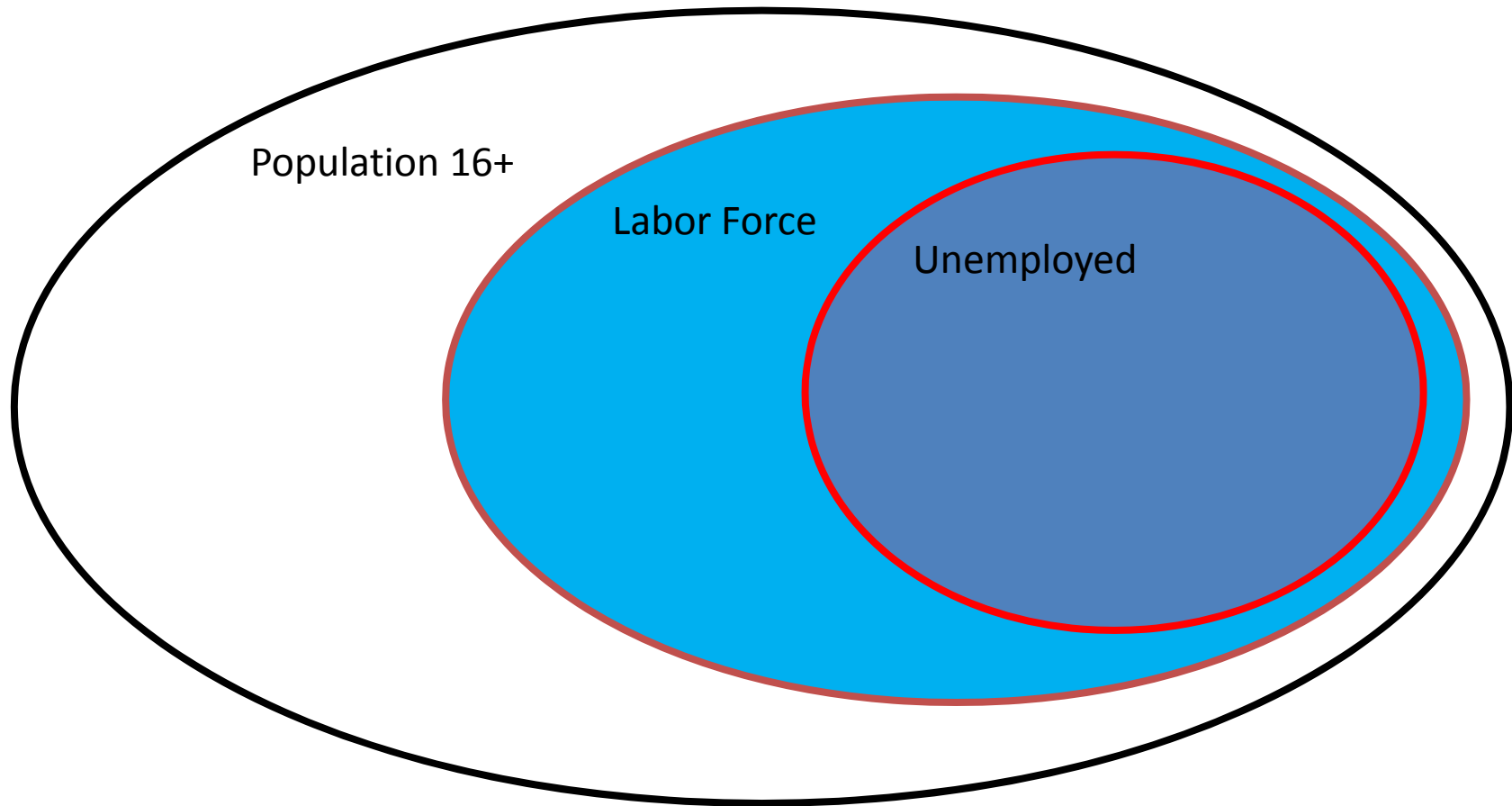
California Community Colleges

- Total Headcount 1,724,226
(Fall 2007)
- 110 Colleges; 72 Districts

A Theory of the Geography of Enrollment

Older people who enroll in community colleges are more likely to come from the immediate area (due to greater reluctance to bear the costs of longer commutes or temporary residence) – because of higher opportunity cost of time

Overview – Labor Force Concepts



Overview – Labor Force Concepts

- Labor Force (LF): those working (full- or part-time) & those “seeking work”*
- Unemployment Rate (UR): Percent of Labor Force that is unemployed**
- Labor Force Participation Rate (LFPR): proportion of the civilian population 16 years + in the LF
- None of these elements is constant; changes in each are determined by different factors
- How individuals respond to changes in UR and LFPR (e.g., by enrolling in community colleges) depends on various factors including age

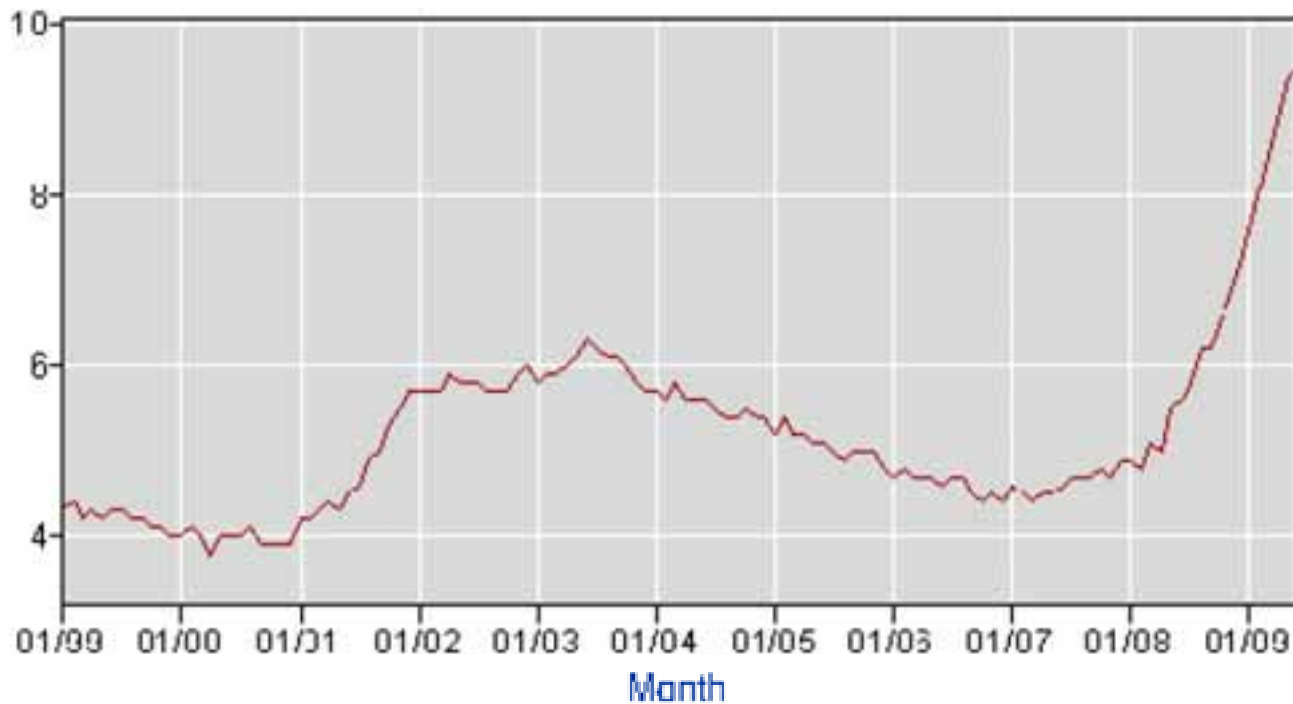
*The term “seeking work” has an official definition that may mask “discouraged workers.”

**Because both full-time and part-time employment is included in the Labor Force, the unemployment figure may mask the true extent of unemployment due to “involuntary part-time employment.”

Concepts – Unemployment Rate

Unemployment Rate (National)

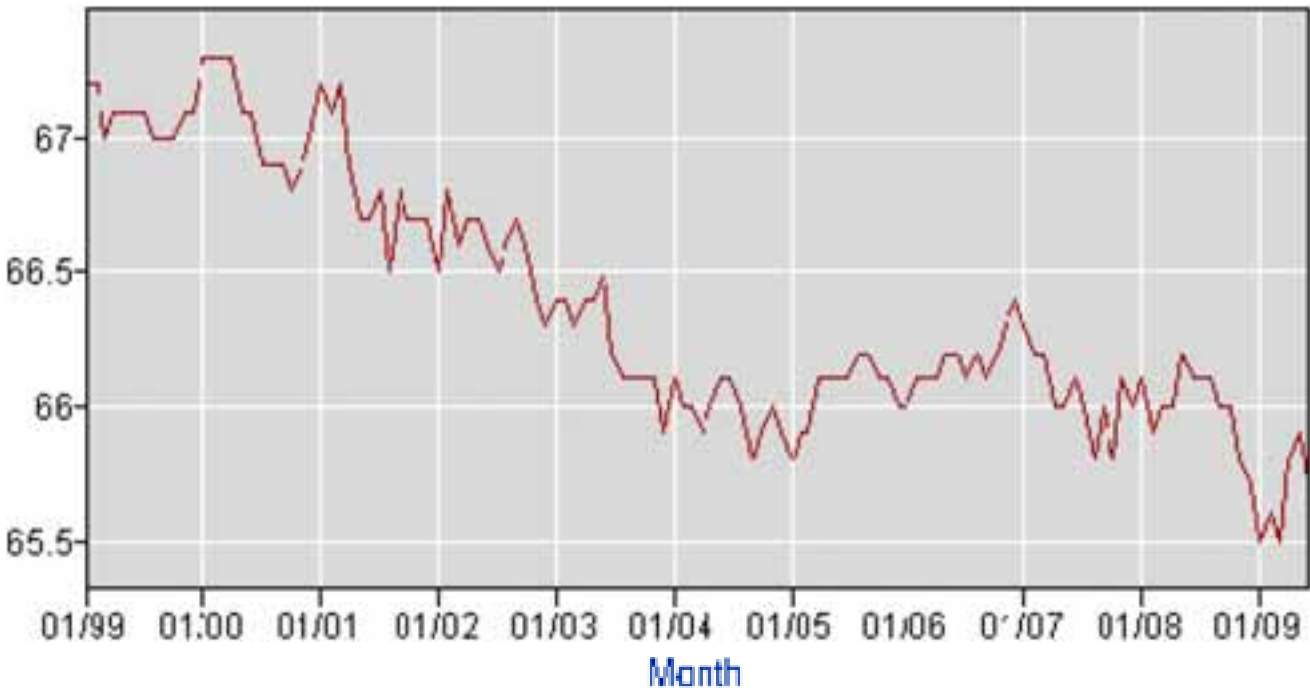
Labor Force Statistics from the Current Population Survey



Concepts – Labor Force Participation Rate (LFPR)

Labor Force Participation Rate (National)

Labor Force Statistics from the Current Population Survey



Literature on Geography of Community College Enrollment

- Christopher Jepsen and Mark Montgomery, “Miles to Go Before I Learn: The Effect of Travel Distance on the Mature Person’s Choice of a Community College,” *Journal of Urban Economics*, 65 (2009) 64-73
- Gregory D. Packin, “California Community Colleges: Student Transportation and Carbon Emissions,” MS Thesis, University of Redlands (CA) December 2009

Jepsen-Montgomery “Miles to Go”

- 150,000 observations in Greater Baltimore area of “working aged” students.
- Possible selection bias because only about 50% of target population geocoded.
- One group of “middle aged” students

Contribution	Jepsen-Montgomery
Problem	impact of travel distance on community college enrollment
Economic Model	implicit: enrollment choice; discrete (conditional) choice of educational institution
Empirical Implications	how does distance from home to nearest community college affect the decision whether to enroll; among attendees, how does distance affect the choice of schools; elasticity estimate of effect of increasing distance on enrollment
Policy Implications	effect on enrollment of expanding the community college system; effect on earnings (see p. 65, col 2) not addressed in this paper but mentioned; tuition effects mentioned note 3, p. 65
Data	Life Long Learning Demonstration project data (Abt Associates)
variables	
sources	Abt Associates (see Literature Cited)
level of aggregation	individual observations
geographic coverage	Greater Baltimore area
time period	confused - different for different variables; mean earning reported only for 1994-95, but sample drawn from 1990-98 (see p. 66)
number of observations	150,000 approx.
representativeness	approximately half of 300,000 not matched with location
missing value/treatment	eliminated from study
sample questions	Descriptive Statistics provide limited assurance that self-selecting sample is representative; mean income statistic is similar, but no information on distribution of income and no information on income other than 1994-95
measurement issues	age, income, house price in what year? Seems at times to be a point-in-time data set, but some data collected over 1990-98
descriptive statistics	generated for some variables; Table 1, p. 66
Literature Cited	Larry Buron, Larry Orr, and Satyendra Patrabansh, <i>The Lifelong Learning Demonstration: Final Evaluation Report on the Experimental Site</i> (Abt Associates, June 1999)

Gregory D. Packin,
“California Community Colleges”

- Similar data to Pogodzinski-Kos but at campus level.
- Only one year (2007).
- No age breakdown.
- Drive-time analysis
- Focus on “carbon footprint”

Our Data About Community Colleges*

- For 2003-2006, Fall enrollment (headcount) by CCD, Zipcode, and age ranges (0-17; 18-19; 20-24; 25-29; 30-34; 35-39; 40-49; 50-64; over 64)
- CCD boundaries (not de facto service areas)

*Thanks to John Roach, Foundation for California Community Colleges

Measuring Educational Capacity

- Enrollment
 - Headcount
 - Full time-equivalent students
- Degrees granted
- California Postsecondary Education Commission
- <http://www.cpec.ca.gov/>

Classifying Educational Programs

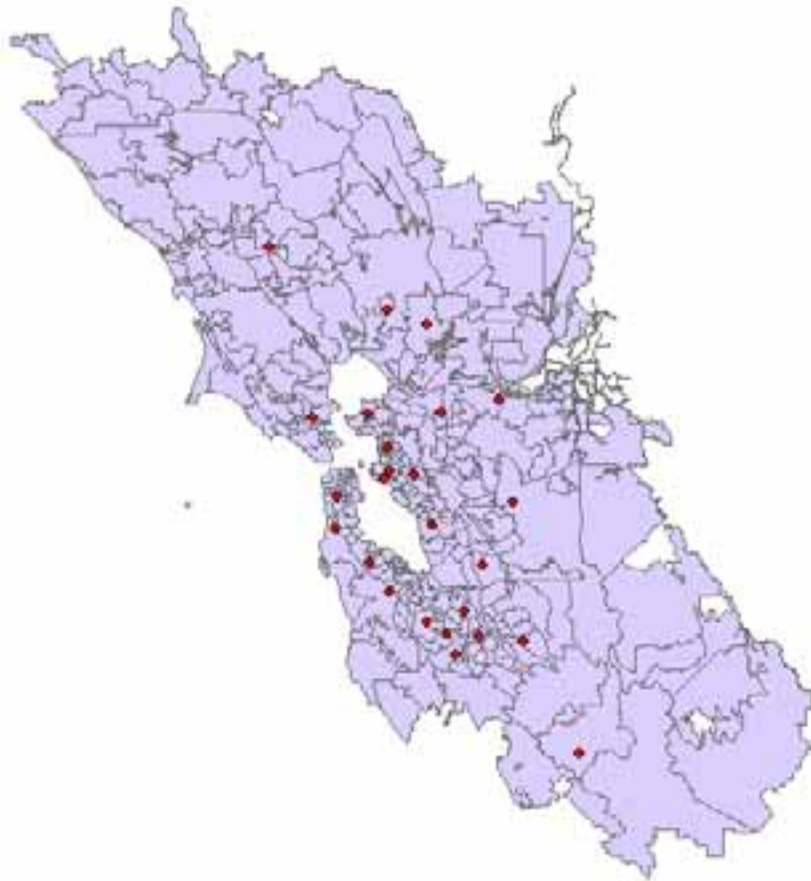
- Classification of Instructional Programs (CIP) codes (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2002165>)
 - National – originates from National Center for Education Statistics (NCES), U.S. Department of Education (<http://nces.ed.gov/>)
 - 2- to 6-digit level
- California Community Colleges (<http://www.cccco.edu/>)
 - TOP (Taxonomy Of Programs) code

NAME	YEAR	AGE 0-17	AGE 18-19	AGE 20-24
Southwestern	2003	5.07	5.65	6.18
Southwestern	2004	5.60	5.71	6.19
Southwestern	2005	5.93	5.63	6.19
Southwestern	2006	5.37	5.68	6.28
Los Rios				
Los Rios	2003	19.59	22.30	18.39
Los Rios	2004	18.18	21.99	18.29
Los Rios	2005	19.60	22.54	18.97
Los Rios	2006	18.36	21.71	18.47
State Center				
State Center	2003	20.18	19.38	18.58
State Center	2004	18.57	18.96	18.72
State Center	2005	18.65	19.29	19.56
State Center	2006	19.37	20.00	19.19
Los Angeles				
Los Angeles	2003	15.98	16.02	16.05
Los Angeles	2004	15.88	16.30	16.23
Los Angeles	2005	15.41	16.56	16.60
Los Angeles	2006	15.49	16.25	16.53

NAME	YEAR	AGE 25-29	AGE 30-34	AGE 35-39
Southwestern	2003	7.69	7.03	6.48
Southwestern	2004	7.23	7.49	6.41
Southwestern	2005	7.61	7.61	6.63
Southwestern	2006	7.51	7.31	7.33
Los Rios				
Los Rios	2003	19.39	22.61	25.15
Los Rios	2004	19.54	22.03	24.37
Los Rios	2005	20.79	24.76	25.03
Los Rios	2006	20.79	23.94	26.38
State Center				
State Center	2003	18.25	18.77	19.21
State Center	2004	17.94	18.95	19.43
State Center	2005	20.18	23.71	30.15
State Center	2006	18.12	19.23	18.74
Los Angeles				
Los Angeles	2003	15.94	15.92	16.09
Los Angeles	2004	15.90	15.83	15.91
Los Angeles	2005	16.44	16.08	15.89
Los Angeles	2006	16.16	16.11	15.85

NAME	YEAR	AGE 40-49	AGE 50-64	AGE OVER 64
Southwestern	2003	6.84	6.65	6.03
Southwestern	2004	6.02	7.23	7.06
Southwestern	2005	6.94	7.11	5.49
Southwestern	2006	6.29	7.67	5.46
Los Rios				
Los Rios	2003	24.25	22.34	16.66
Los Rios	2004	23.16	21.32	15.03
Los Rios	2005	24.90	23.62	15.06
Los Rios	2006	25.65	22.69	15.02
State Center				
State Center	2003	20.20	20.94	18.45
State Center	2004	21.00	21.74	18.13
State Center	2005	31.20	28.16	18.35
State Center	2006	19.46	18.72	17.89
Los Angeles				
Los Angeles	2003	16.75	16.90	15.51
Los Angeles	2004	16.06	16.17	15.67
Los Angeles	2005	15.99	15.84	15.14
Los Angeles	2006	15.97	16.31	15.74

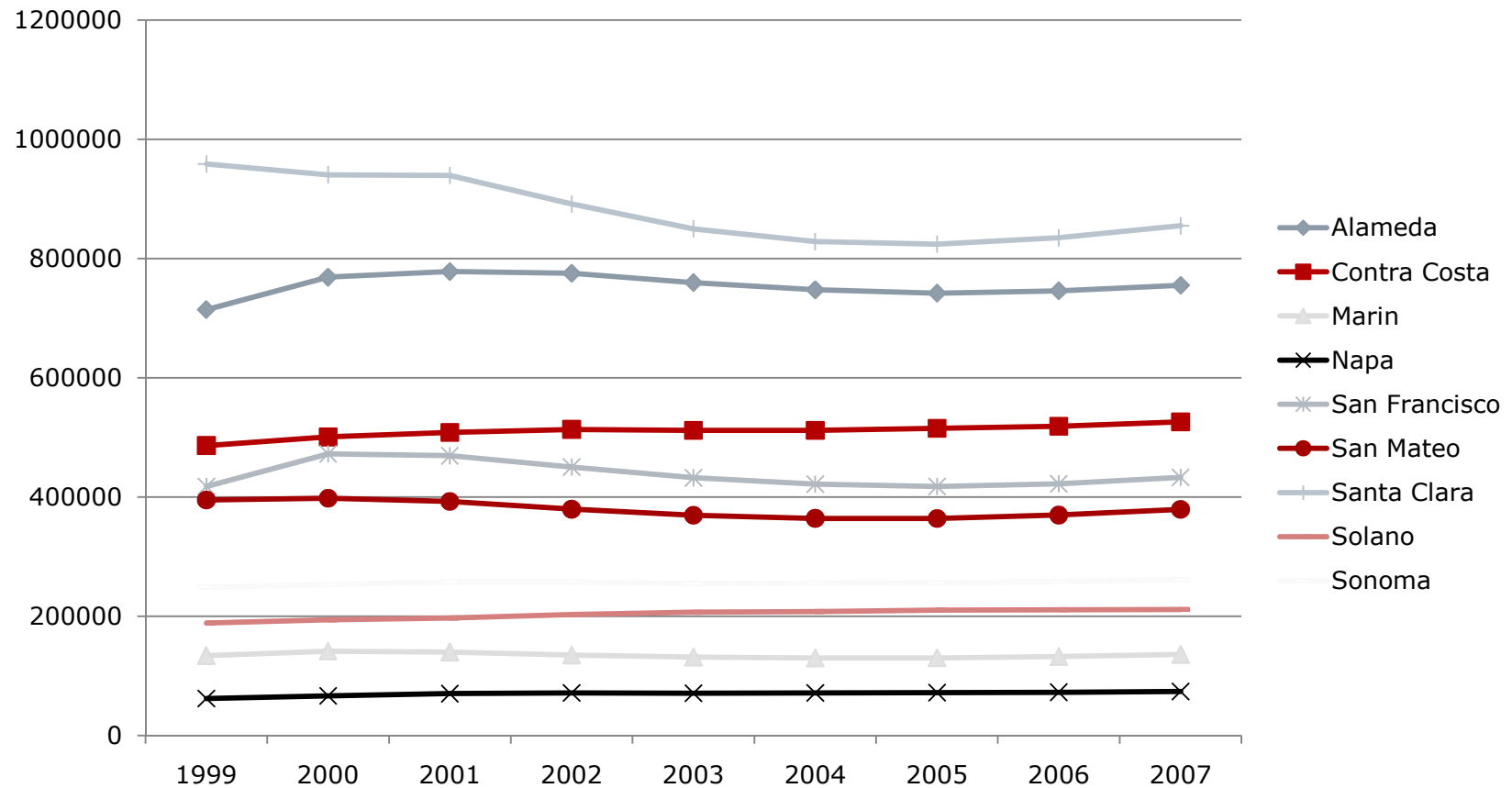
San Francisco Bay Area Community Colleges



25 Public Community Colleges

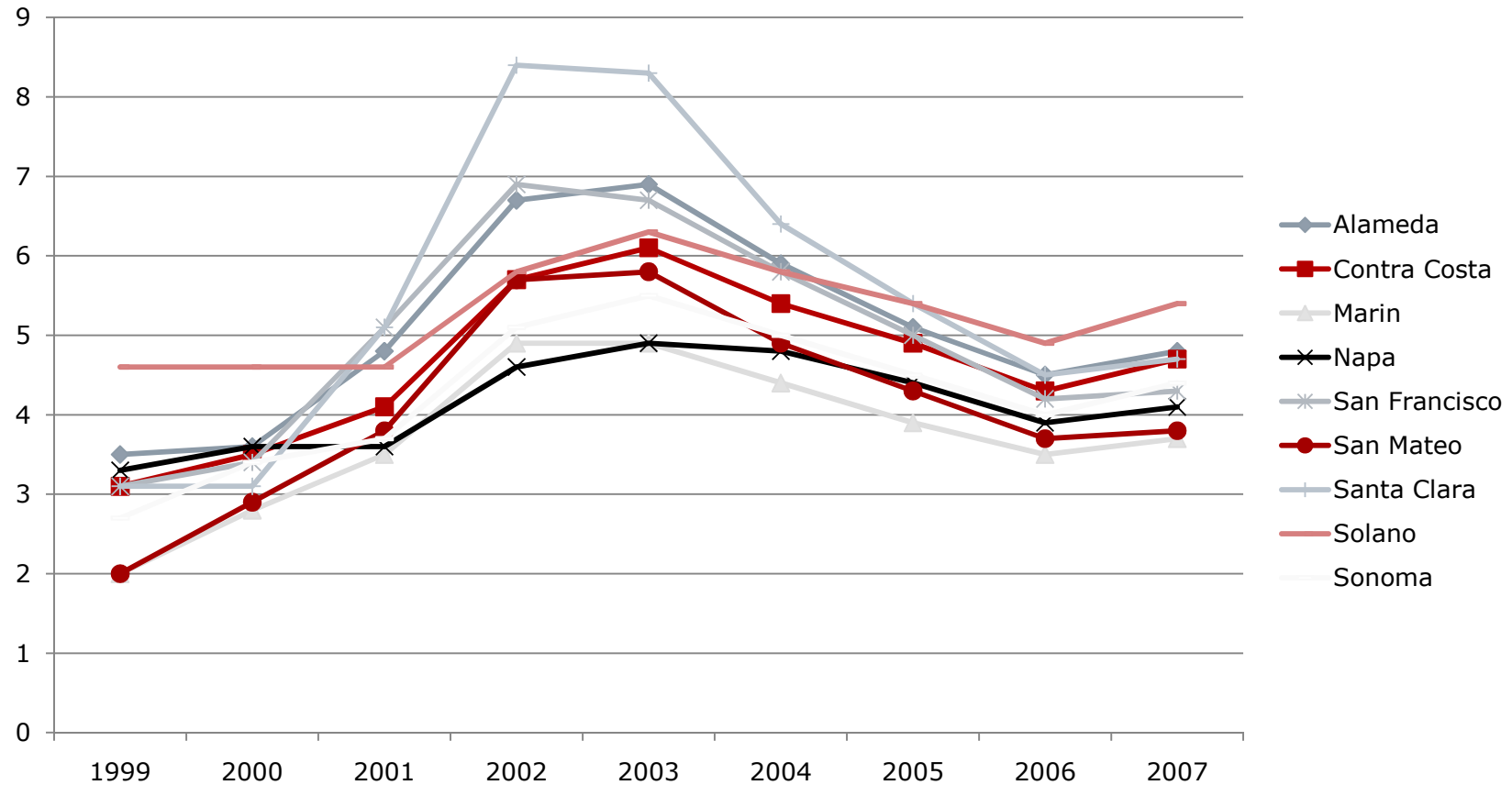
Alameda	7
Santa Clara	7
Contra Costa	3
San Mateo	3
Napa	1
Sonoma	1
Solano	1
Marin	1
San Francisco	1

Bay Area Counties Labor Force



Source: US Bureau of Labor Statistics <http://data.bls.gov/PDQ/outside.jsp?survey=la>

Bay Area Counties Unemployment Rates



Source: US Bureau of Labor Statistics <http://data.bls.gov/PDQ/outside.jsp?survey=la>

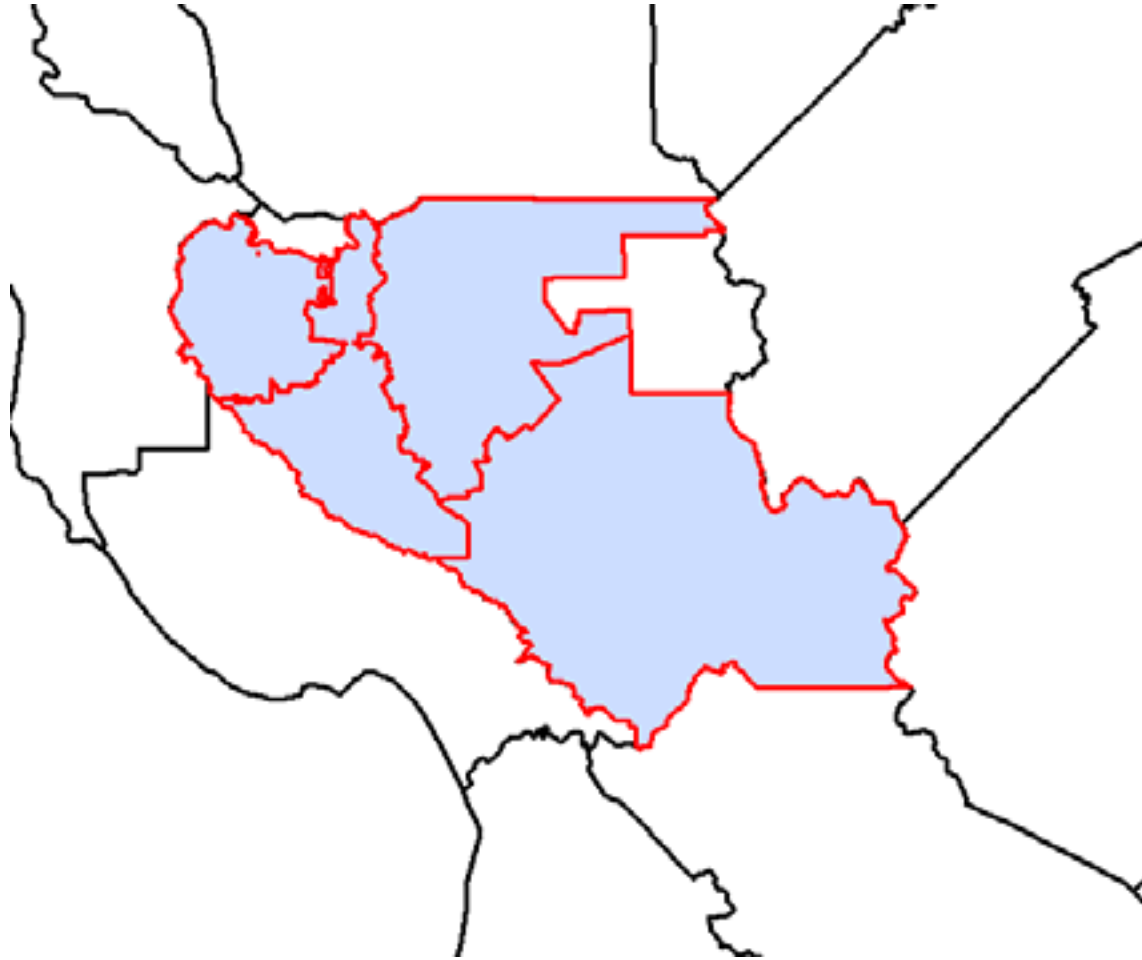
Santa Clara County Community Colleges

7 Community Colleges in Santa Clara County Associated with 4 Community College Districts

- Foothill-DeAnza (420)
- Gavilan (430)
- San Jose-Evergreen (470)
- West Valley-Mission (490)

These community college districts have enrollment greater than 10 from 75 of the approximately 1,700 Zip Codes in California.

Santa Clara County CCDs



Santa Clara County CCDs

Location	Number	Percent
Bay Area	618	100
W/I Santa Clara CCDs	176	28.48
420	122	69.32
430	2	1.14
470	23	13.07
490	29	16.48

Santa Clara County Community Colleges (Total Enrollment)

Total	District				INDEX Total (base=Fall 2003)	District				
	Year	420	430	470		490	Year	420	430	470
Fall 2003	45,553	11,357	20,214	23,920	Fall 2003	100.00	100.00	100.00	100.00	100.00
Fall 2004	41,057	9,958	20,970	22,489	Fall 2004	90.13	87.68	103.74	94.02	94.02
Fall 2005	41,433	10,866	20,501	21,161	Fall 2005	90.96	95.68	101.42	88.47	88.47
Fall 2006	41,665	11,859	19,645	22,850	Fall 2006	91.46	104.42	97.19	95.53	95.53

Santa Clara County Community Colleges (Age Range 18-19)

Age Range 18-19	District				INDEX 18- 19 (base=Fall 2003)	District				
	Year	420	430	470		490	Year	420	430	470
Fall 2003	7,845	1,930	3,217	3,673	Fall 2003	100.00	100.00	100.00	100.00	100.00
Fall 2004	7,422	1,886	3,436	3,733	Fall 2004	94.61	97.72	97.72	101.63	
Fall 2005	7,252	1,800	3,458	3,574	Fall 2005	92.44	93.26	93.26	97.30	
Fall 2006	7,879	2,037	3,611	3,416	Fall 2006	100.43	105.54	105.54	93.00	

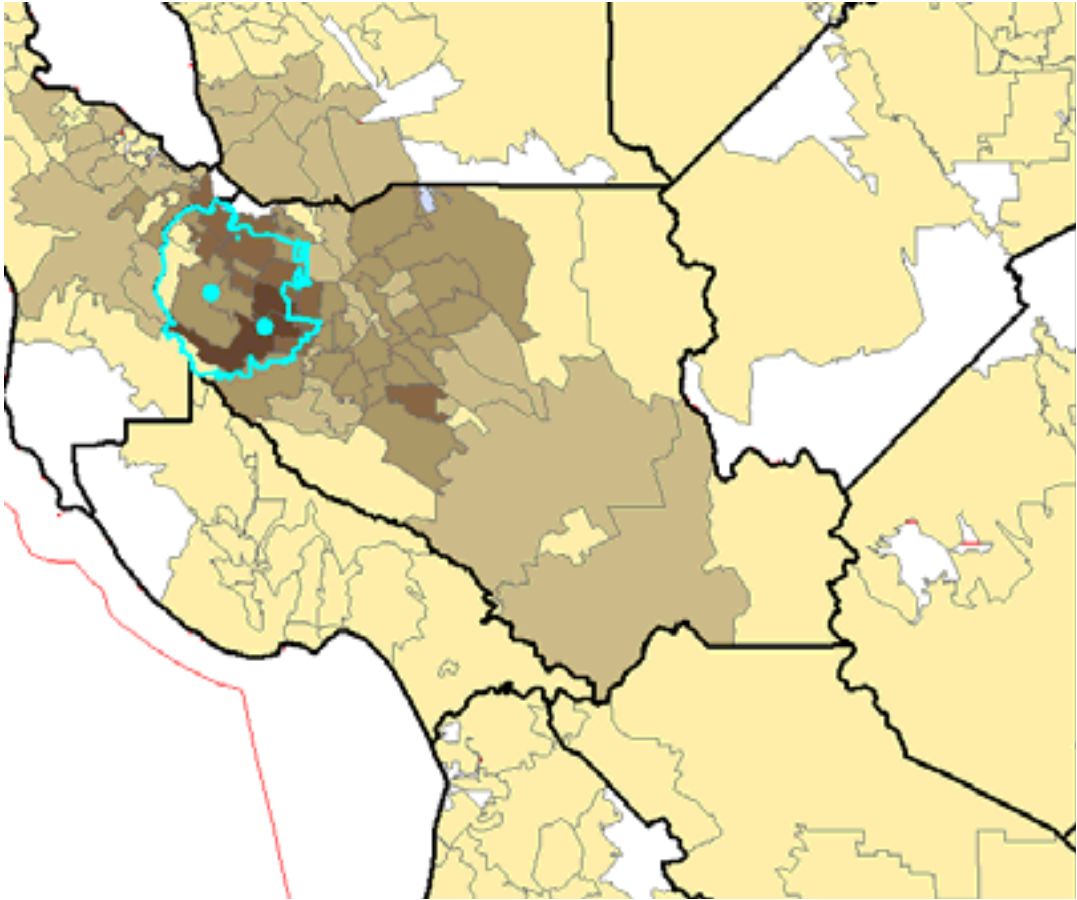
Santa Clara County Community Colleges (Age Range 35-39)

Age Range 35-39	District				INDEX 35- 39 (base=Fall 2003)	District			
	420	430	470	490		Year	420	430	470
Year	420	430	470	490	Year	420	430	470	490
Fall 2003	2,873	895	1,488	1,719	Fall 2003	100.00	100.00	100.00	100.00
Fall 2004	2,524	616	1,660	1,532	Fall 2004	87.85	68.83	68.83	89.12
Fall 2005	2,426	812	1,510	1,389	Fall 2005	84.44	90.73	90.73	80.80
Fall 2006	2,293	829	1,291	1,595	Fall 2006	79.81	92.63	92.63	92.79

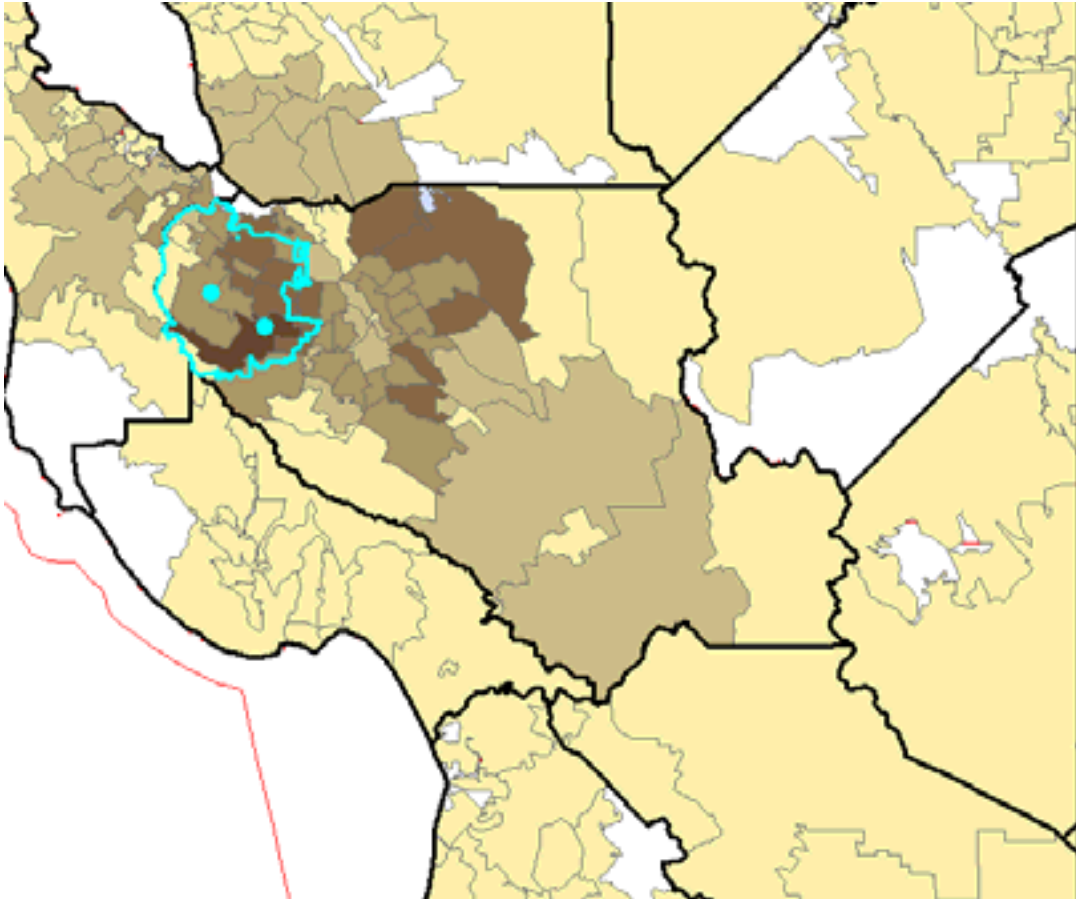
Santa Clara County Community Colleges (Age Range 50-64)

Age Range 50-64	District				INDEX 50- 64 (base=Fall 2003)	District				
	Year	420	430	470		490	Year	420	430	470
Fall 2003	3,017	666	1,194	1,657	Fall 2003	100.00	100.00	100.00	100.00	100.00
Fall 2004	2,669	545	1,403	1,566	Fall 2004	88.47	81.83	81.83	94.51	94.51
Fall 2005	2,802	701	1,353	1,560	Fall 2005	92.87	105.26	105.26	94.15	94.15
Fall 2006	2,734	706	1,143	1,809	Fall 2006	90.62	106.01	106.01	109.17	109.17

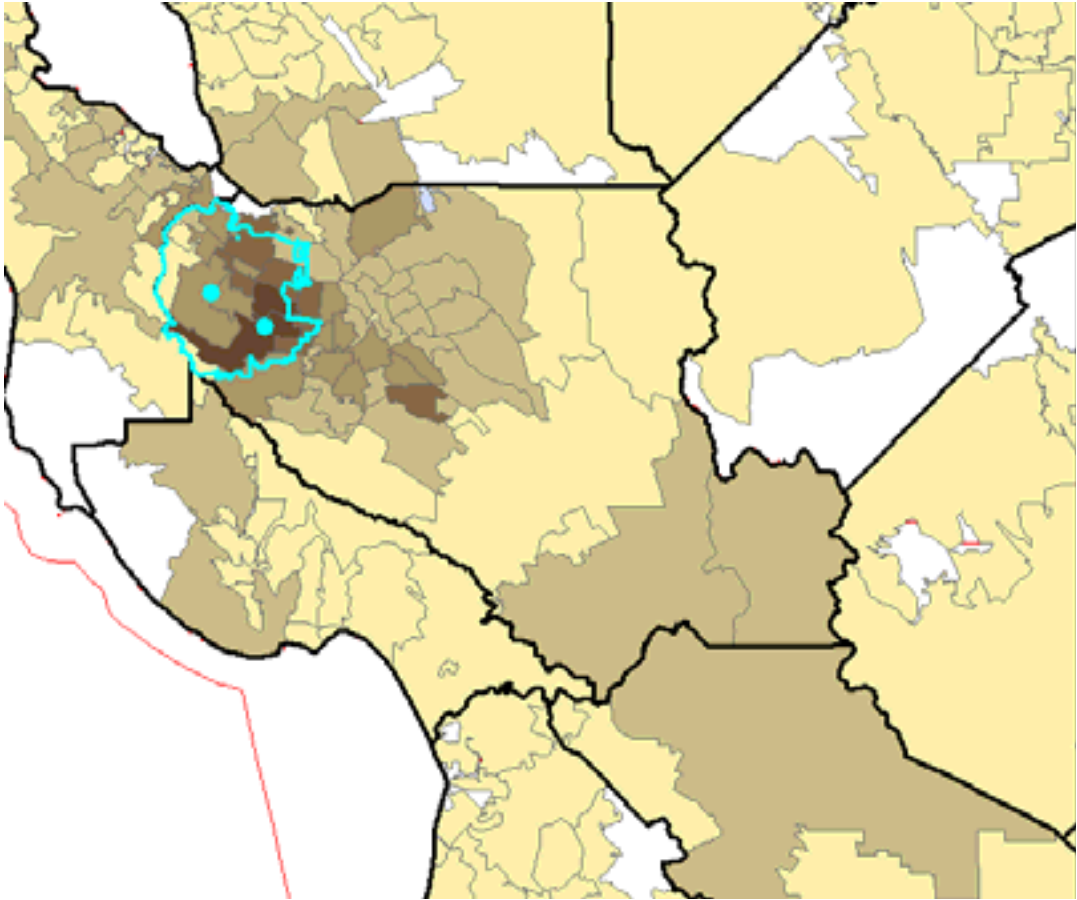
Santa Clara County Community Colleges Spatial Attendance Pattern (Total)



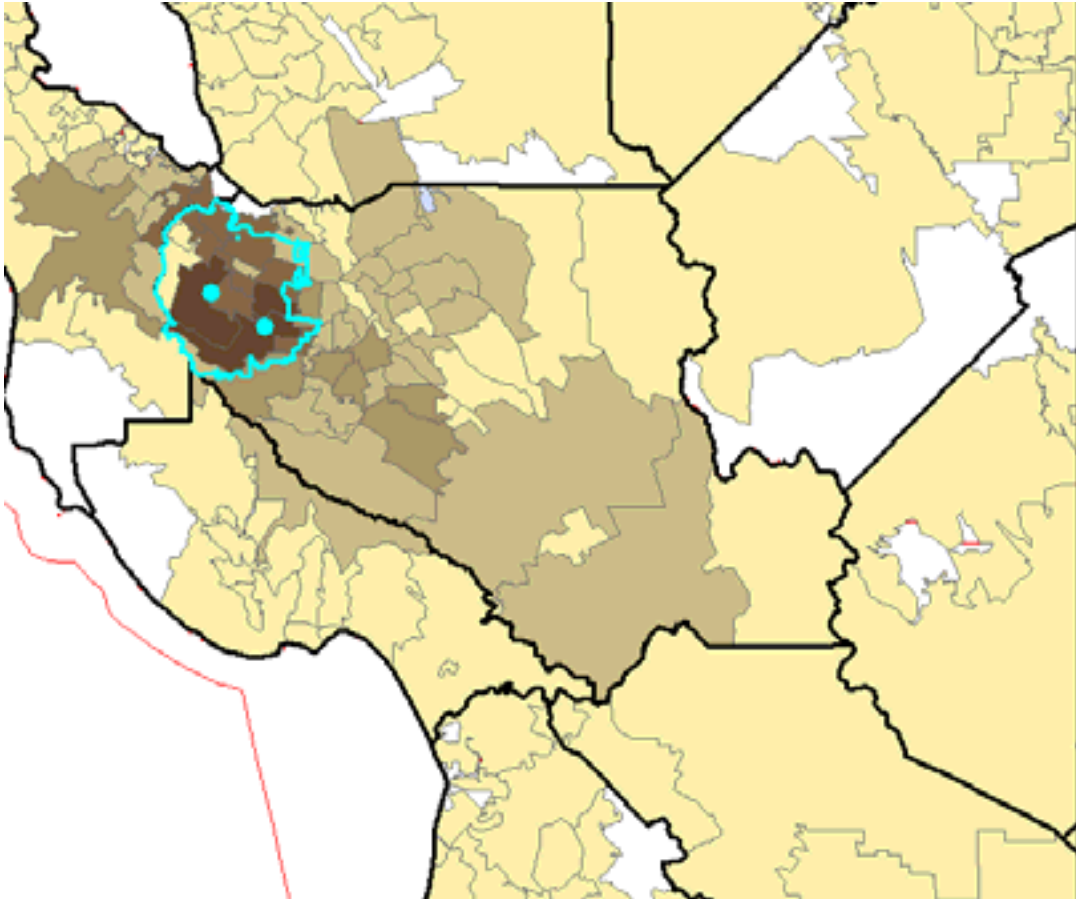
Santa Clara County Community Colleges Spatial Attendance Pattern (Age Range 18-19)



Santa Clara County Community Colleges Spatial Attendance Pattern (Age Range 35-39)



Santa Clara County Community Colleges Spatial Attendance Pattern (Age Range 50-64)



Zip Code Centroids within Given Distances

Campus 421 (95014)	distance in miles from campus		
Zip Code Centroids within given distance	1	3	5
	None	94087	94024
		95014	94040
		95129	94041
			94086
			94087
			95014
			95051
			95070
			95117
			95129
			95130

Age Distribution within Given Distance from a Campus

ZIP	TOTAL	AGE0_17	AGE18_19	AGE20_24	AGE25_29	AGE30_34	AGE35_39	AGE40_49	AGE50_64
95070	8	0	1	1	0	1	0	3	2
95130	75	0	11	19	10	6	9	13	7
95129	9	0	0	1	0	2	2	3	1
95014	8	1	0	1	2	0	2	1	1
95117	1	0	0	0	0	1	0	0	0
95051	18	0	0	3	8	1	2	3	1
94087	10	0	0	1	2	1	3	2	1
94024	5	0	1	1	1	0	0	2	0
94086	9	0	0	2	0	3	1	2	1
94040	8	0	0	2	3	3	0	0	0
94041	6	0	0	1	1	2	1	1	0

Public Policy Implications

- Maintain broad distribution of campuses and resist the temptation to consolidate. Why? Mid-career job-changers not willing to travel as far as younger students.
- Concentrate programs in fields likely to attract younger students (biotech) onto fewer campuses since younger students are willing to travel farther.
- **Consolidate programs, not campuses!**

Questions or Comments (END)

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