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The Impact of Collective Bargaining and Local Appropriations on Faculty Salaries and Benefits at U.S. Community Colleges

Barry R. Mayhall,¹ Stephen G. Katsinas,² and Nathaniel J. Bray³

“...While the problem is primarily a local one, and must be dealt with by local efforts, the Association can doubtless render some valuable aid to these efforts by calling general attention to the gravity of the situation, and by collecting information which will be of use to local committees. (American Association of University Professors (1919), p. 13).

Education historian Wayne J. Urban (1982) has argued collective bargaining is the single most important development in the recent history of local teacher organizations. Its existence allows faculty to collectively pursue material goals in the form of fringe benefits and the setting of work rules seldom abolished once negotiated. Community college scholars link its unionization to that occurring in public elementary and secondary schools (Townsend & Twombly, 2007; 2008). Within higher education, nearly a third of all faculty at four-year universities bargain for salaries and fringe benefits through collective bargaining, and salaries are higher for those who do so (Benedict, 2007; Wickens, 2008). About 42% of public two-year college faculty are represented by collective bargaining agreements, the largest percentage of any sector within postsecondary education. In recent years, community colleges have seen growth in union activity, with new agreements covering graduate student employees and part-time faculty, which have seen a 14% increase and the addition of 50,000 unionized members since 2006 (Barry & Savarese). In citing the Current Population Survey and the Union Membership and Coverage Data Base developed by Hirsch & Macpherson (2013), Sproul, Bucklew, and Houghton find a total of 12,718,235 educational services employees, of whom 31% or nearly 4 million are covered by collective bargaining, and observe “Indeed, higher education is something of a “sleeping giant” within the current landscape of the labor movement. Despite such dramatic and rapid shifts, the rise of academic collective bargaining has not been especially well documented.” (2014, p. 2). This analysis underscores this point.

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According to the 2012 *Directory of U.S. Faculty Contracts and Bargaining Agents in Institutions of Higher Education*, there are 378 institutions of higher education, 864 campuses, and 412 units that have formally organized collective bargaining contracts. These contracts cover a total of 160,062 full- and part-time faculty and professional staff. Roughly 27% of all higher education faculty members are unionized, and the AAUP, the AFT, and the NEA individually or collectively represent nearly 80% of unionized faculty (Barry & Savarese, 2012).

The State Higher Education Executive Officers (SHEEO) *State Higher Education Finance Report FY 2010* reports that 6% of all public higher education operating expenses came from local tax appropriations (Lingenfelter, 2011). In 2008, Illinois State University's Grapevine divided the fifty states into those with and without substantial local tax appropriations. In 25 states, community colleges received more than 10% of total revenues from local tax appropriations. In many of the 25 states without substantial local tax support, including Alabama,

Georgia, and Florida, local appropriations approaches zero. Annual studies of National Council of State Directors of Community Colleges members reveals that in the 2002 recession and the Great Recession, more states with substantial local tax appropriations took cuts, and the cuts were larger in terms of percentages, than those states without local tax appropriations (Katsinas, Palmer, & Tollefson, 2003; Katsinas, et al., 2014). Put differently, in states with substantial local taxation, state funds have been replaced—if replaced at all—with local tax appropriations. Over time, this means pitting community colleges and K-12 education against each other to access the same revenue stream. The problem is not new—this was what Burton R. Clark described in his 1960 case study of San Jose Junior College (Clark, 1960).

Greater dependency upon local appropriations means the states are vacating their traditional role of providing equity across both community college and K-12 school districts. The community colleges that serve single counties and multi-county regions in suburban areas with high assessed property values can generate more local tax revenue (even with lower rates of assessed valuation) than can the 100 rural community colleges that serve high poverty rural counties (Katsinas, Opp, and Alexander, 2003). Put differently, the regions with the greatest need for postsecondary education programs and services may have much lower property values from which to generate revenue (Miller & Holt, 2005).

These inequities are magnified as states cut appropriations. In 2003, Kent Phillippe and George A. Boggs, respectively the Director of Research and President of the American Association of Community Colleges, noted the importance of measuring local funding as a revenue source for community colleges:

For policy purposes, this is a critical factor that can drive many state and local decisions. Colleges with significant local revenues can be somewhat sheltered from the impact of state financial crises. For example, a 5% cut in state revenues has a bigger impact for a college that receives half of its funds from state sources than it has for a college that receives only one-third of its revenue from the state. (Phillippe and Boggs, 2003).

A soon-to-be published study by the Education Policy Center will reveal nearly a hundred community colleges receive less than 5% from state appropriations. Depending on the type of tax, institutional stakeholders must campaign to maintain or increase local funding, as some taxes must be reissued such as a mil levy on property taxes. With local tax support above 40% in many large multi-campus districts, the mil levy renewal election in states with local tax appropriations becomes a struggle with life-or-death consequences.

Are there major differences in the salaries and fringe benefits negotiated by the state-assigned geographic region the community college serves, and by the presence or lack of collective bargaining and local funding? Pieces of this question have been considered by others, but few have “put it all together” to present a much more precisely detailed, nuanced analysis. Differences in differences in geography and funding schemes across state lines have long recognized by community college experts in a rapidly growing literature (Katsinas, 1993; 2003; Hardy & Katsinas, 2006). But these differences are not well recognized in the very limited empirical research that exists on salaries and fringe benefits for community college faculty. George R. Boggs, who served as President of the American Association of Community Colleges from 2001 to 2010, suggests access to local appropriations is a major difference across the states, and that such access matters, particularly when states disinvestment (disinvest?) (Phillippe & Boggs, 2003), a point confirmed by the Education Policy Center's annual surveys of National Council of State Directors of Community Colleges members which show the 25 states with local funding took deeper cuts in state appropriations in the past two recessions than those without (Katsinas, et al., 2013; 2014).

However, geography also affects the issues of collective bargaining, local appropriations, or both, at community colleges. As Friedel, Killacky, Katsinas, and Miller note in their 4th edition of *Fifty State Systems of Community Colleges* (2014), geographically-based service delivery areas are typically *assigned* to community colleges by state statute. This means the rural, suburban, and urban geographic regions given to individual community college districts—a factor over which administrations and negotiating units have little control—matter. The presence of a geographically-based classification from which to draw peer institutions following release by the Carnegie Foundation for the Advancement of Teaching's Basic Classification of Associate's Colleges in 2005 and 2010 allows for the drawing of much more nuanced peer

groups for comparison purposes. That the institutional codes for each of the identifiable 1,028 public community colleges in the Carnegie Basic Classification are included in each and every federal data set released allows for a much more nuanced and useful mapping of salaries and fringe benefits that account for geography, collective bargaining, and local tax appropriations simultaneously. This is the real world in which contracts are negotiated. The publication of national “averages” of local tax appropriations—typically 14 - 17% of total revenues across all U.S. community colleges—masks the reality that for 366 community colleges in the 25 states without substantial local tax appropriations, the local contribution is not just less than 10% of total revenue, it approaches zero (Palmer, 2008). In contrast, there are multi-campus urban community college districts that receive 40% or more of their total funding from local tax appropriations. In an era of state disinvestment, these differences are likely magnified, yet these differences are not well recognized in the literature. Clearly, a more detailed nuanced mapping is needed to draw better peer comparisons, and with the new tools, such mapping is possible.

This study examines the impact of collective bargaining and local appropriations on salaries and fringe benefits of full-time faculty at U.S. community colleges. A more nuanced view is offered, by drawing appropriate institutional peer-group comparisons of rural, suburban, and urban community colleges to more accurately and precisely show just how much of a difference the presence or lack of collective bargaining, local appropriations, and the combined impact of both, actually make. Further, given the technical nature of the few comprehensive studies of fringe benefits for community college faculty, we integrate the findings of King (1971), King & Cook (1980) and Maldonado (2006) in the section on fringe benefits below.

Literature Review

The three major national organizations involved in collective bargaining, the American Association of University Professors (AAUP), the American Federation of Teachers (AFT), and the National Education Association (NEA), all regularly publish compensation studies. Most are focused only solely on four-year institutions, which is curious given that larger percentages of community college faculty are covered by collective bargaining agreements than are faculty at other institutional types.

The AAUP’s extensive efforts to collect salary data began with the creation of its Committee on the Economic Condition of the Profession, Committee Z in 1919:

...The primary task of such a committee would be to collect information regarding the scale of salaries of teachers of different grades in the principal American universities and colleges, the ratio of increase in salaries, during recent years, to the increase in the cost of

living, and the ratio of the salaries paid in higher to those paid in lower grades of the teaching service.

...The question of salaries is becoming increasingly acute; is causing a serious degree of unrest and dissatisfaction in faculties of many colleges and universities; and gravely threatens the future efficiency of the profession, by making it increasingly unlikely that young men of ability will adopt the calling of teacher or investigator.

... While the problem is primarily a local one, and must be dealt with by local efforts, the Association can doubtless render some valuable aid to these efforts by calling general attention to the gravity of the situation, and by collecting information which will be of use to local committees. (AAUP, 1919, p. 13)

The purpose of the AAUP reports nearly a century ago and now, is to gather data to assist local AAUP members negotiate better monetary compensation by providing appropriate peer comparisons (faculty ranks and institutions), and to see how those salaries fare compared to inflation. The AAUP sporadically issued studies beginning in the 1930s (Slichter, S.H., 1934), but by the mid-1960s, these studies became much more refined. The current survey format, adopted in 1969, was specifically designed to measure inflation; its methodological rigor is evidenced by the 239 footnotes to the detailed data tables of the 1,079 reporting institutions presented in Appendices I and II of the 2013-14 report (Curtis & Thornton, 2014, p. 84). The AAUP reports data for *faculty ranks* of Professor, Associate Professor, Assistant Professor, Instructors, and All Ranks, and how average salaries have changed year-to-year and over time (Curtis and Thornton, 2014, Table A, p 7). Often the faculty salaries are compared to administrative salaries. Faculty salaries by academic rank are presented by type of control--public, private-independent (non-profit), and religiously affiliated institutions, as well as by academic field (engineering, law, business, humanities, education, etc.).

The format of AAUP's surveys was adopted in roughly the same time period that the Carnegie Commission on Higher Education released its initial Basic Classification of Institutions of Higher Education (the first draft was issued in 1973, and the first edition was formally released in 1976). The Basic Classification of Institutions of Higher Education has been updated by the Carnegie Foundation for the Advancement of Teaching in 1987, 1994, 2000, 2005, and 2010 (Zhao, 2011; Carnegie, 2012). The Carnegie Basic Classification has been incorporated in AAUP's studies for four decades, to allow for presentation of average nominal and real inflation-adjusted salaries for institutions dating back to 1971-72. Use by the AAUP of the Carnegie Basic Classification, which is embedded in all U.S. Department of Education data bases, allows the drawing of appropriate institutional peer groups at doctoral, master's, and baccalaureate

universities and colleges. To obtain average salaries by faculty ranks (i.e., professor, associate professor, assistant professor, instructor, and all combined) across institution types, the AAUP data separate the two-year category into “Associate’s with Ranks,” and “Associate’s without Ranks” (see Table 1, March-April 2014 report, p. 22).

There are two important limitations to AAUP’s annual surveys. First, its sample of community colleges is small: just 135 institutions of the more than 1,028 identifiers in the Integrated Postsecondary Education Data System (IPEDS) universe participate. Of the 135 responding institutions, 89 are grouped as “Associate’s Colleges with Ranks” (Professor, Associate, Assistant, etc.), and 46 are "Associate's Colleges without Ranks." Second, the AAUP annual salary surveys do not assess fringe benefits. As we shall see, fringe benefits are not well measured in any of the annual surveys conducted by organizations involved with collective bargaining. We argue the lack of more localized data may limit the usefulness of these surveys to faculty at the institutional level, because salaries and fringe benefits are negotiated simultaneously, and not separately.

The National Education Association (NEA) also produces useful information on many issues, including monetary compensation, for higher education professionals. The NEA has more than 3 million members in every state and in 14,000 communities (NEA, 2015). It represents more than 200,000 faculty and staff, most of whom are employed at public colleges and universities (NEA, 2015a). Its Higher Education website lists every edition of its highly informative *NEA Almanac of Higher Education* since 1996. The *Almanac* regularly includes articles on salaries and retirement and benefits (the 2014 edition includes two excellent articles on these subjects by Lee and Conley); it also includes articles on state funding, the economics of massively organized online courses (MOOCs), and bargaining for part-time faculty (NEA, 2014). The NEA’s salary collection efforts in postsecondary education date to about the mid-1950s. In 1964, NEA reported 15,003 full-time instructors at 331 reporting public community colleges, with a median salary of \$7,828, an increase from the \$5,470 median salary reported by 174 two-year institutions in 1955-56 (Maul, 1964).

The American Federation of Labor granted the American Federation of Teachers (AFT) a charter in 1916 (Murphy, 1990), which was soon followed by the organizing of AFT higher education locals at Howard University in 1918, followed soon by faculty groups at colleges and universities in New York, Illinois, and California. In 1966, AFT Local 1650 at Henry Ford Community College (Michigan) led the nation’s first college walkout (AFT, 2015). The AFT today represents more than 1.6 million members through more than 3,000 local affiliates (AFT, 2015a). Its higher education faculty and staff, organized by one of AFT’s five divisions, today represent more than 200,000 faculty (AFT, 2015b). The AFT represents 80,000 contingent

faculty members, and like AAUP and NEA, has made advocacy on their behalf and that of graduate students a major priority in recent years (AFT, 2015c). The AFT's Higher Education division regularly publishes reports on a wide variety of issues that include academic staffing, faculty diversity and LGBTQ accessibility issues, federal legislation and advocacy, student debt, student success, and more traditional "bread and butter" issues such as salaries and fringe benefits including the Affordable Care Act (AFT, 2015d). In January 2010, AFT commissioned Hart Research Associates to conduct a nationwide telephone survey of part time faculty at two- and four-year institutions. This survey found most were satisfied with work conditions, particularly at two-year institutions where 68% of respondents rated "very satisfied" or "satisfied," but also found most would prefer to be in full-time positions (AFT, 2010, p. 10)

The AAUP, NEA, and AFT studies do not typically use the U.S. Department of Education/National Center for Education Statistics' Integrated Postsecondary Education Data System (USED/NCES/IPEDS) Human Resources Survey to present data on both full-time faculty salaries and fringe benefits.

Methodology

With the publication by the Carnegie Foundation for the Advancement of Teaching's 2005 Basic Classification of Associate's Colleges, updated in 2010, a more precise analysis of salaries and fringe benefits full-time faculty receive across geographically-based urban, suburban, and rural geographic service delivery areas is possible. We use the 2010 Carnegie Basic Classification, modified to geographically allocate the large urban community college districts such as Miami-Dade, Valencia, and others placed in their Baccalaureate Associate's Colleges, Primarily Associate's Colleges, and Two-Year Under Four-Year Colleges categories.⁴ To determine the presence of substantial local funding, we use the definition developed in 2008 by Grapevine, housed at Illinois State University's Center for the Study of Higher Education, which since 1960 has annually collected data on state tax appropriations for public higher education operating budgets. In 2012, Grapevine merged its annual data collection survey efforts with the State Higher Education Executive Officers. Under the Grapevine definition (2008), substantial local funding is defined as exceeding 10% of total revenues from all sources for community college (in reality, in most states with less than 10%, total local funding often approaches zero (see Table 1). The list of the 30 states with collective bargaining from the 2012 Directory of

⁴ The Carnegie Foundation for the Advancement of Teaching's 2005 and 2010 editions of the Basic Classification of Institutions of Higher Education in addition to the seven geographic types of community colleges (Rural Small, Rural Medium, Rural Large, Suburban Single Campus, Suburban Multi-campus, Urban Single Campus, and Urban Multi-Campus) also includes 25 Baccalaureate Associate's Colleges, 41 Primarily Associate's Colleges, and 47 Two-Year Under Four-Year Colleges. The research presented in this paper classifies these institutions in a manner exactly like the geographic classifications, to allow inclusion of the entire public community college universe.

States With and Without Collective Bargaining AND With and Without Substantial Local Tax Appropriations Greater than 10% of Total Revenues from All Sources					
State	Collective Bargaining	Local Support (>10% of All Revenues)	State	Collective Bargaining	Local Support (>10% of All Revenues)
Alabama			Nebraska	X	
Alaska	X		Nevada	X	
Arizona		X	New Hampshire	X	
Arkansas			New Jersey	X	X
California	X	X	New Mexico	X	X
Colorado		X	New York	X	X
Connecticut	X		North Carolina		X
Delaware	X		North Dakota		
Florida	X		Ohio	X	X
Georgia			Oklahoma		X
Hawaii			Oregon	X	X
Idaho		X	Pennsylvania	X	X
Illinois	X	X	Rhode Island	X	
Indiana			South Carolina		X
Iowa	X	X	South Dakota	X	
Kansas	X	X	Tennessee		
Kentucky			Texas		X
Louisiana			Utah		
Maine	X		Vermont	X	
Maryland	X	X	Virginia		
Massachusetts	X		Washington	X	
Michigan	X	X	West Virginia		
Minnesota	X		Wisconsin	X	X
Mississippi		X	Wyoming		X
Missouri	X		Total	30	25
Montana	X	X			
Notes:					
1. States with collective bargaining have a majority of their community colleges listed in Berry, J., & Savarese, M. (2012). <i>Directory of U.S. faculty contracts and bargaining agents in institutions of higher education</i> . New York: National Center for the Study of Collective Bargaining in Higher Education and the Professions.					
2. States with substantial local tax appropriations greater than 10% of total revenues are from Palmer, J. C. (Editor). (2008). One-year and two-year percent changes in state tax appropriations for higher education, FY 08(Table 6). Retrieved from www.grapevine.illstu.edu/ables/pdf/Table6_08.pdf					

Collective Bargaining was derived from data published by the National Center for the study of Collective Bargaining in Higher Education and the Professions (Berry & Savarese, 2012).

The 2010-2011 Human Resources Survey published by USED/NCES/IPEDS was used to obtain salary and fringe benefit data for community colleges. We note that due to technical changes in the Human Resources Survey, 2010-2011 is the last year USED collected data on fringe benefits for community college faculty, and all of higher education.

Results

The 1,028 community colleges include 632 rural community colleges, which are further sub-divided into 147 Rural Small, 342 Rural Medium, and 143 Rural Large institutions. Rural Small community colleges have annual unduplicated headcount enrollments of under 2,500 students, Rural Medium community colleges between 2,500 and 7,500, and Rural Large have enrollments over 7,500. Suburban and urban community colleges are divided into Single Campus and Multi-Campus districts. Experience shows that nearly every display advertisement for senior positions indicates if the institution serves a rural, suburban, or urban area, and how many campuses the institution may possess. Past writings using Associate's Colleges classifications reveal that about 40% of U.S community college students attend multi-campus suburban and urban community colleges, which comprise about 16% of all institutions.⁵

Tables 2 and 3, below, present the data on institutions and full-time faculty in numbers and in percentages across institutional types and within types for geographically defined Associate's Colleges by Carnegie Basic Classification type, and across those community colleges with collective bargaining and with and without local appropriations, and across those community colleges without collective bargaining and with and without local appropriations.

As Table 2 shows, there were 1,028 identifiable community colleges in the IPEDS Human Resources Survey data base. Of these 632 serve state-assigned rural areas, as determined by the Carnegie Basic Classification of Associate's Colleges, while 218 serve suburban and 178 serve urban areas. Among the 1,028, 607 (59%) are in one of the 30 states with collective bargaining, and 421 (41%) are in one of the 20 states without. In addition to showing the specific breakdown within each of the seven Carnegie Basic Classification Associate's College type, which will be of interest to readers interested in drawing peer institutions, Table 2 shows that roughly four of five

⁵ These are the most prominent institutions in national discussions of community college issues. Their presidents and chancellors typically are chosen for national commissions. The emergence of the multi-campus institution in the late 1960s and the need for appropriate professional development and administrative and teaching approaches for this new type of community college was a motivating factor for founding Dallas County Community College District chancellor Bill J. Priest and others to create the League for Innovation in the Community College.

Table 2
 Institutions, With and Without Collective Bargaining Substantial Local Tax Appropriations, 2010-11

Institutions (in NUMBERS)							
	All Two-Year Colleges	With Collective Bargaining			Without Collective Bargaining		
		Sub-total	& with Local Appropriations	& w/out Local Appropriations	Sub-total	& with Local Appropriations	& w/out Local Appropriations
Rural Small	147	69	49	20	78	40	38
Rural Medium	342	159	109	50	183	105	78
Rural Large	143	94	53	41	49	37	12
Rural Average	632	322	211	111	310	182	128
Suburban Single Campus	111	88	58	30	23	14	9
Suburban Multi-Campus	107	81	56	25	26	17	9
Suburban Average	218	169	114	55	49	31	18
Urban Single Campus	36	24	15	9	12	8	4
Urban Multi-Campus	142	92	65	27	50	36	14
Urban Average	178	116	80	36	62	44	18
Average, All	1,028	607	405	202	421	257	164
Within Carnegie Institution Type (in PERCENTAGES)							
Rural Small	100	47	33	14	53	27	26
Rural Medium	100	46	32	15	54	31	23
Rural Large	100	66	37	29	34	26	8
Rural Average	100	51	33	18	49	29	20
Suburban Single Campus	100	79	52	27	21	13	8
Suburban Multi-Campus	100	76	52	23	24	16	8
Suburban Average	100	78	52	25	22	14	8
Urban Single Campus	100	67	42	25	33	22	11
Urban Multi-Campus	100	65	46	19	35	25	10
Urban Average	100	65	45	20	35	25	10
Average, All	100	59	39	20	41	25	16
Across Carnegie Institution Type (in PERCENTAGES)							
Rural Small	14	11	12	10	19	16	23
Rural Medium	33	26	27	25	43	41	48
Rural Large	14	15	13	20	12	14	7
Rural Average	61	53	52	55	74	71	78
Suburban Single Campus	11	14	14	15	5	5	5
Suburban Multi-Campus	10	13	14	12	6	7	5
Suburban Average	21	28	28	27	12	12	11
Urban Single Campus	4	4	4	4	3	3	2
Urban Multi-Campus	14	15	16	13	12	14	9
Urban Average	17	19	20	18	15	17	11
Total	100	100	100	100	100	100	100

Table 3							
Full-Time Faculty Employed at Community Colleges With and Without Collective Bargaining and Substantial Local Tax Appropriations, 2010-11							
	No. of Faculty	Faculty With Collective Bargaining AND			Faculty Without Collective Bargaining AND		
		Sub-total	Local Appropriations	No Local Appropriations	Sub-total	Local Appropriations	No Local Appropriations
Rural Small	5,684	2,412	1,646	766	3,272	1,539	1,733
Rural Medium	27,055	10,989	7,468	3,521	16,385	9,513	6,553
Rural Large	22,238	13,877	9,054	4,823	8,361	6,365	1,996
Rural Average	54,977	27,278	18,168	9,110	28,018	17,417	10,282
Suburban Single Campus	14,361	11,854	8,438	3,416	2,507	1,649	858
Suburban Multi-Campus	17,411	12,663	9,369	3,294	4,748	3,778	970
Suburban Average	31,772	24,517	17,807	6,710	7,253	5,427	1,828
Urban Single Campus	5,895	4,253	2,985	1,268	1,642	1,188	454
Urban Multi-Campus	30,155	18,977	12,971	6,006	11,178	8,954	2,224
Urban Average	36,050	23,230	15,956	7,274	12,820	10,142	2,678
Total, All	122,799	75,205	52,111	23,094	47,697	32,909	14,788
PERCENTAGE of Faculty by Geographic Institution Type							
Rural Small	100	42	29	13	58	27	30
Rural Medium	100	41	28	13	61	35	24
Rural Large	100	62	41	22	38	29	9
Rural Average	100	50	33	17	51	32	19
Suburban Single Campus	100	83	59	24	17	11	6
Suburban Multi-Campus	100	73	54	19	27	22	6
Suburban Average	100	77	56	21	23	17	6
Urban Single Campus	100	72	51	22	28	20	8
Urban Multi-Campus	100	63	43	20	37	30	7
Urban Average	100	64	44	20	36	28	7
Average, All	100	61	42	19	39	27	12
PERCENTAGE of Faculty with and without Collective Bargaining and Local Appropriations							
Rural Small	5	3	3	3	7	5	12
Rural Medium	22	15	14	15	34	29	44
Rural Large	18	18	17	21	18	19	13
Rural Average	45	36	35	39	59	53	70
Suburban Single Campus	12	16	16	15	5	5	6
Suburban Multi-Campus	14	17	18	14	10	11	7
Suburban Average	26	33	34	29	15	16	12
Urban Single Campus	5	6	6	5	3	4	3
Urban Multi-Campus	25	25	25	26	23	27	15
Urban Average	29	31	31	31	27	31	18
Average, Total	100	100	100	100	100	100	100

suburban community colleges and two of three urban community colleges have collective bargaining, while just over half of rural community colleges have collective bargaining. The bottom panel in Table 2 also shows how the seven Carnegie Associate's College types are spread by the presence or lack of both collective bargaining and local appropriations. This panel, when compared with the institution number above in the first panel, shows that the percentage of Suburban Single Campus and Suburban Multi-campus community colleges with collective bargaining is higher than their percentages across all community colleges, while the percentage of Rural Small, Rural Medium, and Rural Large community colleges without collective bargaining is substantially higher than their percentage across all types of community colleges.

The first panel of Table 3's first column shows that the nation's 122,799 full time community college faculty are distributed across Carnegie Basic Associate's College type as follows: 54,977 or 45% are employed at rural, 31,772 or 26% are employed at suburban, and 36,050 or 29% are employed at urban community colleges. Table 2 shows Suburban community colleges comprise 21% of all community colleges, while Table 3 shows that the 31,722 full-time faculty they employ are 26% of the nation's total, that 77% work at the 169 institutions that bargain collectively, and that 73% work at institutions with local funding.

Table 3 also shows the strikingly different patterns of collective bargaining across geographic types of community colleges. About half of the 54,977 full-time faculty at rural community colleges work under collective bargaining (27,458 27,278?), and a third work at institutions with collective bargaining and with local appropriations. In sharp contrast, 24,517 or 77% of full-time faculty at suburban community colleges work under collective bargaining agreements, 23,230 or 64% of urban community college faculty do so. Put differently, collective bargaining reaches better than three of four suburban, better than two of three urban, but less than half of rural community college faculty. Those involved with negotiating salaries and benefits can profit from seeing where their institutions place on these two tables as they consider the presentation of average salaries and average fringe benefits on the charts that follow.

Salaries in 2010-11

Table 4 shows the average salaries of full-time faculty at U.S. community colleges in 2010-11, the presence or lack of collective bargaining, the presence or lack of local appropriations, and the combined impact of both. For reference purposes, the number of colleges and number of faculty are placed in the second and third columns after the listing of community colleges by Carnegie Basic geographic type. The fourth column shows that the average salary for the nation's 122,799 community college faculty in 2010-11 was \$62,411. Geographically, across the seven types of Associate's Colleges, the highest average annual salary is \$71,101 for the 17,411

faculty working at the nation's 107 Suburban Multi-Campus community colleges; this compares to a low \$49,962 for the 5,684 faculty employed at the nation's 147 Rural Small community colleges.

The fifth column of Table 4 shows the striking difference collective bargaining makes on salaries. For six of the seven geographic types of Associate's Colleges, comprising roughly nine of ten community colleges and 117,115 or 95% of the nation's 122,799 full-time faculty, operating under collective bargaining agreements means substantially more pay than for faculty who do not. The conundrum the nation's 147 Rural-Small colleges face will be explained in the discussion section, but even with this exception, average annual salaries for all seven geographic types of colleges are higher "With collective bargaining and without local appropriations," than they are in either "Without collective bargaining and local appropriations" and "Without collective bargaining and no local appropriations."

Table 4 also shows the impact of local funding. It shows an average annual salary of \$68,841 for the 75,205 full-time faculty (Table 3) employed by the 607 community colleges with collective bargaining (Table 2). Faculty who work at community colleges with access to local funding are paid more in five of the seven Carnegie geographic categories than those who do not: Rural Large, Suburban Single Campus, Suburban Multi-Campus, Urban Single Campus, Urban Multi-Campus—only Rural Small and Rural Medium colleges are paid less.

Table 4									
Average Salaries of Full-Time Faculty at U.S. Community Colleges, 2010-11: The Impact of Collective Bargaining and Substantial Local Tax Appropriations									
Average Salaries of Full-Time Community College Faculty...									
<i>(in Dollars)</i>									
	Colleges	No. of Faculty	Average Salary, ALL	<u>WITH</u>			<u>WITHOUT</u>		
				Collective Bargaining AND			Collective Bargaining AND		
				Sub-total	Local Appropriations	No Local Appropriations	Sub-total	Local Appropriations	No Local Appropriations
Rural Small	147	5,684	49,962	53,733	53,239	54,794	47,182	46,315	47,953
Rural Medium	342	27,055	52,893	57,597	57,557	58,806	49,619	49,391	49,485
Rural Large	143	22,238	60,675	66,071	70,433	57,884	51,718	51,524	52,337
Rural Average	632	54,977	58,104	61,712	63,585	57,981	49,950	49,899	49,780
Suburban Single	111	14,361	70,521	74,387	77,375	67,006	52,243	51,200	54,248
Suburban Multi-Campus	107	17,411	71,579	77,263	82,537	62,263	56,421	57,239	53,235
Suburban Average	218	31,772	71,101	75,872	80,091	64,677	54,978	55,404	53,710
Urban Single Campus	36	5,895	61,222	65,377	67,350	60,733	50,458	51,113	48,747
Urban Multi-Campus	142	30,155	65,655	70,782	75,571	60,439	56,950	58,666	50,679
Urban Average	178	36,050	64,930	69,798	74,033	60,490	56,119	57,775	50,351
Totals & Averages	1,028	122,799	62,411	68,841	72,454	60,717	52,359	53,215	50,370

Fringe Benefits in 2010-11

Since salaries and fringe benefits are negotiated together, it is not surprising that the exact same differences in geographic type of community college, and the presence or lack of collective bargaining and local appropriations would be reflected in the fringe benefit data. That said, Table 5 shows striking differences: While on average full-time community college faculty received just under \$18,896 in fringe benefits in 2010-11, faculty working at community colleges with collective bargaining received on average \$2,000 more than the national average, while those doing the same work at community colleges without received nearly \$3,500 less.

The spread in fringe benefits is even more pronounced when geographic type of community college is mapped with collective bargaining and local appropriations. For example, the average annual dollar value of fringe benefits paid to the 14,361 full-time faculty employed by the 111 Suburban Single Campus community colleges in the United States was \$20,689 in 2010-11. But consider the real differences by inserting the data on number of faculty and institutions from Tables 2 and 3, above for just Suburban Single Campus community colleges: If you happened to be one of the 8,438 faculty at one of the 58 Suburban Single Campuses with collective bargaining and local appropriations, you received \$24,280 in fringe benefits. If you were among the 3,416 faculty with collective bargaining and no local appropriations, you received \$14,529. The faculty who worked at a Suburban Single Campus community college without collective bargaining and local appropriations received \$15,145; while those who worked at a Suburban Single Campus without collective bargaining and no local appropriations received \$20,459 in fringe benefits. Faculty working at Rural Medium community colleges without collective bargaining received \$14,311, while faculty at an Urban Single Campus community college with collective bargaining received \$24,478.

Table 5									
Average Fringe Benefits of Full-Time Faculty at U.S. Community Colleges, 2010-11: The Impact of Collective Bargaining and Substantial Local Tax Appropriations									
Average Annual <i>Dollar Value</i> of Fringe Benefits Paid to Full-Time Community College Faculty...									
<i>WITH</i>									
<i>WITHOUT</i>									
Collective Bargaining AND									
Collective Bargaining AND									
Average, ALL									
Sub-total									
Local Appropriations									
No Local Appropriations									
Sub-total									
Local Appropriations									
No Local Appropriations									
Colleges									
No. of Faculty									
Rural Small	147	5,684	16,678	18,466	18,232	18,969	15,359	14,775	15,878
Rural Medium	342	27,055	17,444	20,634	21,178	20,569	14,966	14,311	16,645
Rural Large	143	22,238	19,119	21,445	24,854	15,045	15,259	14,595	17,373
Rural Average	632	54,977	18,809	20,855	22,311	17,510	15,099	14,456	16,657
Suburban Single	111	14,361	20,689	21,470	24,280	14,529	16,995	15,145	20,549
Suburban Multi-Campus	107	17,411	18,949	20,486	23,266	12,580	14,850	14,318	16,924
Suburban Average	218	31,772	19,736	20,962	23,747	13,572	15,591	14,568	18,626
Urban Single Campus	36	5,895	20,754	22,802	24,478	18,856	15,750	15,623	18,020
Urban Multi-Campus	142	30,155	19,204	21,463	23,629	16,787	15,368	15,278	16,262
Urban Average	178	36,050	19,457	21,708	23,787	17,147	15,379	15,319	16,560
Total Average	1,028	122,799	18,896	21,154	23,254	16,252	15,248	14,738	16,883

Fringe Benefits Over Time

We now turn attention to a brief presentation that compares results of the four major studies conducted in 1971, 1980, 2006, and 2015 for the major fringe benefit types. Space does not allow the presentation of individual data tables. We begin by noting that public community colleges offer a wide range of fringe benefits to full-time faculty, and the understanding benefit plans is important to every faculty member, as the specific workings allows effective money management decisions to live better lives, especially in retirement (Maldonado, 2006). Employers should advise faculty members about the benefits that are available to them and how the plans can best meet individual needs.

Table 6				
<i>Fringe Benefits Offered at U.S. Public Community Colleges, 1970 to 2010-11</i>				
Type	NUMBERS			
	1970 (King)	1980 (King/ Cook)	2003-4 (Maldonado)	2010-11
<i>Institutions reporting</i>	712	685	1,053	1,028
Medical/Dental Plans	696	673	1,043	955
Social Security	510	485	900	826
Retirement Plan	707	670	701	909
Group Life Insurance	523	589	801	754
Short Term Disability	262	571	n/a	n/a
Long Term Disability	627	466	n/a	n/a
Guaranteed Disability	n/a	n/a		424
PERCENTAGES				
Medical/Dental Plans	98	99	95	94
Social Security	72	71	82	83
Retirement Plan	99	98	64	96
Group Life Insurance	74	88	73	76
Short Term Disability	37	87	n/a	n/a
Long Term Disability	88	71	n/a	n/a
Guaranteed Disability	n/a	n/a	40	45

But there is no set contribution or fringe benefit level across American community colleges, and this may help to explain the wide ranges by types of community colleges across the states. In many states, community college faculties are considered state employees, and any benefits given to state employees are extended to community college faculty. This statement is tempered by the reality that some seek to shift this cost as well—Texas' community colleges

vigorously opposed efforts in the mid-2000s by former Governor Rick Perry to shift 100% of fringe benefit contributions, because in his view, community colleges were creatures of local and not state governments—even though they were created by statute in 1947.

Most community colleges offer the most common types of fringe benefits: retirement, short-term disability plans, health insurance, group life insurance, and social security, but some do not (Maldonado, 2006). Inasmuch as state funding for community colleges has dropped during and not recovered well following the last two recessions, it follows that only community colleges with healthy revenue streams can easily maintain fringe benefits due to local tax appropriations, and that those colleges without ready access to local revenues (or those serving low-property wealth areas) are more challenged. But it also follows that in states with no collective bargaining, larger amounts of fringe benefits can be more efficiently allocated if the negotiation occurs at the state and not local levels, because the pools of employees are much larger. The statewide community college systems in Alabama, Kentucky, and Virginia each have a single governing board of all of the separately accredited community colleges in their states, but negotiate fringe benefits on a statewide basis. Further research in this area is needed.

Few comprehensive studies on fringe benefits paid to community college faculty exist in the literature. The first comprehensive, truly national study of fringe benefits at U.S. community colleges was performed by Francis P. King in 1971. *Benefit Plans for Community Colleges* was formally endorsed and supported by the American Association of Junior Colleges (AAJC) and funded by the Teachers Insurance and Annuity Association (TIAA). A follow-up national study on fringe benefits entitled *Benefit Plans in Higher Education*, was published in 1980, coauthored by Francis P. King and Thomas J. Cook. King's 1971 study only examined public and private community colleges in the United States, while the King and Cook 1980 study examined all higher education institutions. From 1980 until 2006, with the publication of Jose F. Maldonado's study, there was no comprehensive examination of both salaries and fringe benefits for U.S. community college faculty. We will summarize key findings below due to space limitations.

King (1971) examined six types of fringe benefits offered by community colleges: retirement plans, federal Social Security, group life insurance, health insurance, short-term disability income plans, and long-term disability income plans. The 1,007 public and private two-year colleges listed in the *1969 AAJC Junior College Directory* as well as junior colleges that opened in 1969 were surveyed, and 89% of AAJC's membership including 233 private junior colleges, responded. The 712 public two-year colleges responding employed 53,948 full-time faculty. In 2006, Maldonado examined fringe benefits at 1,053 community colleges, and found medical/dental plans offered by the 95% of institutions, Social Security at 82%, group life insurance at 73%, and retirement plans at 64% of community colleges. In 2010-11, 115,844 faculty or 94% were covered by Medical/Dental plans, and 6,955 or 6% were not covered,

perhaps because faculty may have insurance from a previous job, are carried by their spouse's insurance, or there may be small number of institutions or states that do not supplement employee medical plans. As Maldonado found in 2003-04, we found all community colleges offered the same key types of fringe benefits in 2010-11, but there are large dollar differences in the value of those fringe benefits based upon the presence of collective bargaining and local appropriations. This is discussed in further detail below.

The Social Security Act of 1935 was implemented to bring retirement income and small lump sum death benefits to employees in business and industry (Social Security Act, 1935). Retirement benefits, survivor benefits, disability insurance, and health insurance were added. But state and local government employees, including community college faculty, were not included in the original Act due to concerns of taxation of nonprofit institutions, the continuation of existing retirement plans, and program costs. Private and church-related colleges were more influential within the higher education industry in 1935. The Social Security Act Amendments of 1950 and 1954 extended participation in the Social Security program to employees of state and local governments and by 1969, approximately 71% of public community colleges reported including Social Security among their listed faculty benefits. Conversely approximately 30% of public community colleges did not report offering Social Security as part of their benefit packages (King, 1971). In 1980, the number of public community colleges offering Social Security remained at 71% (King & Cook, 1980). Maldonado's 2006 study found 82% of community colleges offered Social Security in 2003-04, while we found 80% in 2010-11.

Another important fringe benefit offered by public community colleges is group life insurance. King's 1971 study found 73.5% of community college faculty received a group life insurance plan, while King & Cook found 88% offered such plans in 1980, validating her 1971 observation that group life insurance plans were increasing in popularity. Maldonado's 2006 study found 73% of community colleges offered full-time faculty group life insurance in 2003-04, and we found the exact same percentage in 2010-11.

Health insurance is one of the most important—and expensive--fringe benefit offered by community colleges to full-time faculty. In 1971, King found 98% of public community colleges had at least one type of health plan, including basic hospitalization-surgical-medical coverage (93%), supplementary major medical expense coverage (76%), a single comprehensive medical insurance plan (16%), and dental care (10%). These percentages have stayed high over the years—in 2003-04, Maldanado found 95% of community colleges offered Medical/Dental plans to full-time faculty, while in 2010-11, we found 94% did so.

Workmen's Compensation laws provide income for accidents that occur at work; this benefit was provided at 69% of the reporting public community colleges in 1971, 70% of community colleges in 2003-04, and 72% of community colleges in 2010-11.

Long-term disability income plans protect employees if salary or sick leave pay runs out due to a disabling illness or injury that continues for a long period of time. The customary dividing line between short-term disability and long-term disability is six months. King found the largest component for long-term disability (88.8%) came from provisions in state retirement plans, and that group insurance plans provided coverage for long-term disability income for 37.3% of public community college faculty. In the 1990s, many higher education institutions shifted from a defined benefit to defined contribution retirement plans (Conley, 2012). Because the IPEDS Human Resources Survey does not collect information on this specific benefit, Maldonado did not include this in 2006, nor do we.

Defined benefit retirement plan participants receive benefits based on years of service, and an average of earnings over a certain time period. The benefits must be paid regardless of what happens to the assets in the employee's pensions plan. Defined contribution plans set up a specific amount that is taken from an employee's income with a possible monetary amount coming from the employer. The benefits paid to the employee are based on the amount of contributions as well as the assets built on those contributions. The main concern about defined contribution plans is that future benefits bear the risk of market declines. The change to a defined contribution plan shifts more of the cost of fringe benefits from a shared organization and institution responsibility to the responsibility of the individual. In 1982, 29% of higher education retirement plans were defined benefit plans. In 2007, the percentage of defined benefit plans had dropped to 12% (Conley, 2009).

Equity assets in retirement plans have dropped in value due to two recessions that book-ended the decade of the 2000s. The decline in value during the Great Recession was particularly severe. Between October 2007 and October 2008, retirement plans lost \$1 trillion in equity, which was evenly divided between defined benefit and individual retirement accounts (Munnell, Aubry, & Muldoon, 2008). The value of defined benefit plans declined significantly, and state and local retirement plans were funded at 87% in 2007 but dropped to 65% in 2008 due to the poor economy. States should ensure unfunded pension plans—a critically important fringe benefit—are properly funded. This issue is of increasing concern to state lawmakers (Katsinas, et al., 2013; 2014).

The costs of medical care benefits for community college faculty have increased dramatically in recent decade. Many states have enacted legislation to reduce state contributions to fringe benefits. Early retirement programs have been enacted to save costs (Conley, 2012).

Retiring employees were replaced by others with less experience, and full-time positions were eliminated and replaced with part-time positions that did not include fringe benefits. Sixteen states increased employee contribution requirements, including Alabama, which increased its required employee contribution rates from 5% to 7.5%. Fifteen states have increased age and service requirements for retirement, as the recent recession appears to have heightened pressure on community colleges to finance a full range of fringe benefits for faculty.

Discussion

There are amazing differences in monetary compensation of full-time faculty across the landscape of community colleges when geography, collective bargaining, and local appropriations are all accounted for. Table 7 combines the average salary data in Table 4 and the average fringe benefit data in Table 5 to show the average total monetary compensation paid to full-time faculty at U.S. community colleges. Nationally, on average, in 2010-11, full-time community college faculty received \$81,307 in monetary compensation; this compares to \$95,457 paid to faculty at community colleges with collective bargaining and local appropriations, \$76,969 for faculty at community colleges with collective bargaining and no local appropriations, \$67,954 for faculty at community colleges without collective bargaining and with local appropriations, and \$67,252 for faculty at community colleges without collective bargaining and with no local appropriations.

Across the seven geographic types of community college using the modified Carnegie Basic Classification of Associate's Colleges, the highest monetary compensation was \$105,803 paid to full-time faculty at Suburban Multi-campus community colleges, and the lowest was \$61,090 paid to full-time faculty at Rural-Small community colleges that did not have collective bargaining and with local appropriations. What explains this striking gap of monetary compensation of more than \$40,000 in a single year?

In her 1993 review of quantitative studies of the effect of unionization on community college faculty remuneration, Wiley found a positive impact on faculty compensation, but "that effect declines over time" and that, "in some cases, unionization may have a negative effect on the employer's contribution to fringe benefits and percentage change in pay levels. This suggests that changes in salary levels at two-year public colleges may be more reflective of other factors, such as unique institutional and faculty characteristics, rather than collective bargaining involvement." Since community colleges are most often locally controlled, and their regions are typically assigned by state statute, deploying the Carnegie Basic Classification of Associate's Colleges makes good sense, as does using the *Directory* published by the National Center for the Study of Collective Bargaining in Higher Education and the Professions to examine collective bargaining, and the Grapevine data set to examine the effects of substantial local tax funding in

an era of state disinvestment. That our analysis reveals compensation differences for full-time faculty *greater than \$20,000 in a single year* across community college types for persons ostensibly engaged in the same work (teaching five classes a term) suggests that the presence of collective bargaining does indeed matter over time, as do the state-assigned geographic service region and presence of local taxation.

Table 7
The Impact of Collective Bargaining and Local Appropriations
Total Monetary Compensation for Full-Time Faculty at U.S. Community Colleges: 2010-2011

	ALL	<u>WITH</u> Collective Bargaining AND...		<u>WITHOUT</u> Collective Bargaining AND...	
		Local Appropriations	No Local Appropriations	Local Appropriations	No Local Appropriations
Rural Small	\$66,640	\$71,471	\$73,763	\$61,090	\$63,831
Rural Medium	\$70,338	\$76,380	\$79,376	\$63,703	\$66,129
Rural Large	\$79,794	\$95,287	\$72,929	\$66,119	\$69,711
Rural Average	\$76,913	\$85,270	\$75,941	\$64,355	\$66,437
Suburban Single Campus	\$91,210	\$101,655	\$81,535	\$66,345	\$74,798
Suburban Multi-Campus	\$90,529	\$105,803	\$74,842	\$71,557	\$70,159
Suburban Average	\$90,837	\$103,837	\$78,250	\$69,973	\$72,336
Urban Single Campus	\$81,975	\$91,828	\$79,589	\$66,736	\$66,767
Urban Multi-Campus	\$84,859	\$99,199	\$77,226	\$73,944	\$66,941
Urban Average	\$84,387	\$97,820	\$77,638	\$73,093	\$66,911
Average, All	\$81,307	\$95,457	\$76,969	\$67,954	\$67,252

Notes:

1. Data obtained from the Integrated Postsecondary Education Data System (IPEDS) Full-time Salary and Benefit Survey 2010-11.
2. The Carnegie Foundation for the Advancement of Teaching's 2010 Basic Classification of Associate's Colleges was modified by Katsinas (2014, forthcoming) by reclassifying the 47 Public Two-year Colleges under Universities, 41 Public Four-year Primarily Associates, and 25 Baccalaureate/Associate's Colleges across the seven geographic Associate's Colleges categories.
3. The source of data for collective bargaining is the National Center for the Study of Collective Bargainir in Higher Education and the Professions.
4. Local appropriations data is from the *Grapevine* (Palmer, 2008).

The large annual monetary compensation disparities among and across the seven geographic types of U.S. community colleges points to the importance of research on areas already begun and new areas as well. Most notably are the strikingly low annual average salary and fringe benefit levels found at many of the nation's 147 Rural Small and 342 Rural Medium community colleges. The 5,684 faculty at Rural-Small and the 27,055 faculty at Rural-Medium community colleges comprise 27% of the total full-time community college teaching workforce nationwide. While it is fair to acknowledge that living costs in rural America are lower than in suburban and urban areas, particularly for housing, one still would assume urban and suburban full-time faculty do essentially the same work as their rural community college faculty counterparts do. That faculty at small rural colleges are paid so much less suggests that the very institutions that are most needed to reach students from high poverty rural areas are the least likely to have a trained full-time faculty workforce most likely to possess the teaching skills needed to reach them. With no major federal initiative in this sector, and no major foundation programs since the Ford Foundation ended its Rural Community College Initiative in 2002, we know much less than we should—even though 45% of all full-time faculty were employed by rural community colleges (Table 2 3). The year 2015 marks the fiftieth anniversary of the epic Selma to Montgomery Voting Rights March to bring equal voting rights to people from some of our nation's poorest rural counties. That so little attention is being paid today to this sector is sad at best, and far less than what a great nation should expect of itself moving forward in the second decade of the 21st century.

In their 2008 Community College Review article, "Community College Faculty: What We Know and Need to Know," Susan Twombly and the late Barbara K. Townsend analyzed peer reviewed articles published in five major journals and books published from 1990 to 2007. They asserted that "we know little about the relationship between labor market characteristics and hiring practices," and that "it is not entirely clear how many community colleges are unionized and what percentage of the faculty is part of collective bargaining units." This study reveals 75,205 of the nation's 122,799 full-time faculty in 2010-11 worked at one of the 607 rural, suburban and urban community colleges located in one of the 30 states with collective bargaining. Twombly and Townsend's assertion that "...the faculty labor market in community colleges works very differently from that of 4-year colleges and universities," and that this has "significant implications" for graduate students considering community college teaching careers as well as for the institutions filling positions is clearly correct.

The future will likely pose many challenges for many types of community colleges to recruit and retain qualified, committed full-time faculty. When National Council of State Directors of Community Colleges members in 2010 were asked "In my state, funding is insufficient to hire full-time faculty to staff programs in high-wage careers/fields including

nursing, engineering technology, etc.", 31 (62%) were in agreement, 13 (26%) were in disagreement, and 6 were neutral (Katsinas & Friedel, 2010). That this response came at the height of the Great Recession probably means a tightening faculty labor market going forward. In 2006, Rossler and Townsend found the average age of community college to be 50 years of age. Now, a decade later, an impending wave of turnover of full-time faculty hired during the baby boom may well be upon us. The wave of retiring baby-boom era community college presidents is already well underway. The significantly lower salaries and lower levels of specialized fringe benefits paid to full-time faculty at rural community colleges strongly suggests these institutions will be challenged as the higher education industry moves into a period of rapid faculty turnover. What incentives can institutions provide to attract diverse and highly-qualified faculty? How will appropriate faculty development, including expensive specialized programming and access to doctoral education, be provided? Will existing salary structures allow these colleges to pay for full-time faculty in high demand areas? Given the 15% metropolitan/non-metropolitan wage differential identified by Charles W. Fluharty at the Rural Policy Research Institute (2005), at what point does high loan debt taken by today's undergraduate and graduate students lower the odds of making a career choice to teach at a rural community college?

Further study of monetary compensation at U.S. community colleges is clearly needed. It is likely, however, that we may know less about fringe benefits at community colleges in future years, as regular collection of fringe benefit data through the Human Resource Survey ended in 2011-12. Unless the U.S. Department of Education reverses this decision, it will be incumbent on other entities concerned with faculty salary and fringe benefit issues to consider proposals to fund studies every three to five years to add data regarding fringe benefits to IPEDS data for longitudinal comparisons. Such studies should include: a) how the presence of both local support and collective bargaining impacts full-time faculty salaries, b) the impact of access or lack of access to part-time faculty, particularly in high demand fields that different types of institutions have; c) part-time faculty and professional staff; d) how lower levels of access to additional graduate study impacts faculty career migration patterns in areas such as science, technology, engineering, and mathematics (STEM), disciplines that are critical to the future high-wage job base for all areas of our nation. More comprehensive studies projecting future community college staffing needs, as were conducted in the mid-1960s, are needed now.

To prepare faculty to pursue teaching careers at lower paying community colleges, we recommend federal and state policymakers consider loan forgiveness programs. Such programs could be similar to the Paul H. Douglas Teaching Scholarship Program created by the Higher Education Act of 1965, which gave loan forgiveness for teachers who taught for five years in high poverty urban and rural elementary and secondary schools (United States Code, 1994). A

similar program could institute student loan forgiveness for graduates who chose to teach in high poverty urban and rural areas. The National Science Foundation and other interested entities should consider funding studies addressing this specific policy concern. Such work builds upon NSF's deep, on-going commitment to promote and expand undergraduate research at community colleges, exemplified by the 133 page report by the American Association of Community Colleges' affiliate National Council of Instructional Administrators and the Council on Undergraduate Research (CUR), *Tapping the Potential of All: Undergraduate Research at Community Colleges* (Hansel & Cejda, 2014) and the recent New Directions for Higher Education volume, *Enhancing and Expanding Undergraduate Research: A Systems Approach* (Malachowski, Osborn, Karukstis & Ambos, 2014). A comprehensive study linking faculty salaries and fringe benefits to long-term assessments of community college faculty needs, with special emphasis on science, technology, engineering, and mathematics areas, is consistent with NSF's long term goals, and would be a service to the nation.

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