ORIGINAL ARTICLES

Separate and Distinct: A Comparison of Scholarly Productivity, Teaching Load, and Compensation of Chiropractic Teaching Faculty to Other Sectors of Higher Education

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Background: Faculty scholarship, teaching load, and compensation can be indicators of institutional health and can impact curricular quality. Periodic data are published by the US Department of Education for all sectors of higher education, but do not list chiropractic colleges as a separate category. **Objective:** To report on the scholarly output, teaching load, and compensation of the full-time faculty at one chiropractic college, and to compare those data to national and local norms. **Methods:** Data on chiropractic faculty were collected from within the institution. External data were collected from the US Department of Education and US Bureau of Labor Statistics. **Results:** The chiropractic faculty assessed create about one-tenth the scholarly output, carried 2.7 times the course load of external doctoral faculty and 1.4 times the course load typical of 2-year (community) college faculty, received two-thirds the salary typical for all segments of education, and one-half the typical retirement benefits. **Conclusion:** Results are suggestive of significant deficiencies within chiropractic education that pose risk to the future of the profession. (The Journal of Chiropractic Education 21(1): 1–11, 2007)

Key Indexing Terms: chiropractic; education, professional

INTRODUCTION

Governmental and professional agencies regularly collect and publish information regarding the occupational activities, work products, and compensation of faculty in higher education. Information of this type is generally not available regarding faculty at chiropractic colleges and should be. The future of the profession is dependent on the quality of the education provided to its future practitioners, and assessment of the health of the educational segment of the profession and of the quality of the programs provided to train future chiropractors should be regularly undertaken.

While such assessment is logically a central component of any informed consideration of the future development of the profession, actual compiled data are nonexistent. Such data are not regularly collected and/or published in any formal, standardized form. Most chiropractic institutions in North America do provide compensation data to reporting governmental agencies. However, while there are periodic publications that synthesize information regarding compensation, benefits, work load, and scholarly productivity for postsecondary education nationally, both globally and by Carnegie descriptors, no such public synthesis is known to exist for chiropractic institutions. These factors are important in the ability of chiropractic colleges to attract and/or retain quality faculty, influence curricular quality, and impact the future development of the profession.

The purpose of this article is to report on the teaching loads, scholarly productivity, and compensation of faculty at one chiropractic college (Los Angeles College of Chiropractic, or LACC), and to compare that information to national norms for

The Journal of Chiropractic Education

Vol. 21, No. 1. Printed in U.S.A.
1042-5055/$22.00

faculty nationwide. It is hoped that this will stimulate systematic collection and reporting of similar data from all chiropractic colleges and meaningful reflection on the implications of such data on the future of the profession.

METHODS

Data collected at LACC are in relation to full-time faculty teaching within the chiropractic curriculum only. Personnel who were part-time, adjunct faculty, or others whose primary responsibility was not teaching, were excluded from consideration, as most of the external data available for comparison were based on assessment of the working conditions of full-time postsecondary faculty primarily engaged in teaching activities.

Data on scholarly productivity were obtained from annual faculty performance appraisal documentation. This source was preferred to institutional reporting of publications, as performance appraisal documentation at the institution also includes unpublished activity, such as peer reviews and unpublished presentations. Data for this study were from calendar years 2004 and 2005. Mean values for the 2-year period of reporting were calculated (product per faculty member). No private personnel data (eg, outcomes of performance evaluation process) were collected or considered for this investigation.

Data on teaching work loads were obtained from annual reports of manpower allocation, which are routinely prepared by the dean. There were a few personnel with faculty appointments whose job duties are primarily or even entirely administrative and who had little or no teaching work load (such as the dean or various directors). These personnel were excluded from the sampling base. There were other faculty members whose primary job function is instructional, but who have reduced work loads as a consequence of significant administrative activity (eg, department chairs). These personnel are scheduled with release time from the classroom, and that release time is reported on schedules and manpower reports as virtual instructional time. For example, department chairs receive 6 contact hours per week of release time on their teaching schedules. For the purposes of data reporting here, these personnel are included, and the scheduled release time has been added to the reported scheduled instructional time. Reported contact hours in this article thus include actual hours of face-to-face time in scheduled instructional activities with students or quantified release time from such activity for administrative duties, but do not distinguish between didactic or clinical instruction, nor between lead instruction (which entails significant course administration and the creation of instructional and/or evaluation materials) and assisting (which entails little or no labor outside the classroom). Data for this study were from the 2004/05 and 2005/06 academic years. Mean values were calculated (contact time per week, per faculty member).

Data regarding faculty salaries at multiple chiropractic institutions for the 2004/05 academic year were obtained from the Integrated Postsecondary Education Data System (IPEDS).[1] Salary data from this source are reported as averages for each reporting institution, and values are expressed as equivalent to 9-month teaching contracts. For faculty that teach on 12-month contracts (as is the case for chiropractic faculty), the 9-month contract equivalent is calculated by reporting agencies by multiplying the reported 12-month salaries by 0.8182. To compare LACC salaries to other chiropractic colleges, an average of salaries at all chiropractic institutions reporting to IPEDS except LACC was calculated, and those calculated values were compared to IPEDS data for LACC.

Data on faculty salaries were obtained from the Director of Human Resources. Data for each faculty member was also accompanied by academic rank, but were not accompanied by name, department, or other information that could be used to associate salary data with individuals. Data were only available for faculty members that were employed by the institution at the time of reporting; there are therefore no data included for faculty members who were employed during the reporting interval but who separated from the institution prior to the time of reporting. Annual salaries for all full-time faculty members were provided for the time period spanning the 1995/96 academic/fiscal year to 2005/06. Mean values were calculated by rank and for all faculty for all years of reporting, and median values were calculated for the 2005/06 year by rank and for all faculty. Mean hourly wage for chiropractic faculty was calculated based on a 40-hour work week and 52 weeks.

National averages for teaching work loads and scholarly productivity were obtained from the US Department of Education (USDE).[2] The USDE periodically collects information on many factors involving faculty in higher education and makes this

information publicly available. The results of these periodic surveys are also categorized by institutional setting, which makes a more meaningful comparison to the chiropractic educational sector possible. Chiropractic colleges in the United States all offer first professional doctoral degrees and are either privately owned or nonprofit corporate entities. The institution under consideration here is a nonprofit corporate entity. For these reasons, the segment chosen for immediate comparison was "private not-for-profit doctoral" (a category that includes health professional doctoral programs). Data were also compared to norms for "public 2-year" (community colleges), as this was the sector within US postsecondary education with the highest teaching loads and lowest scholarly productivity. The most recent publication of such data is from 1999, and is based on 1998 data. While work load and scholarly productivity data regarding public 2-year institutions were utilized from this source, compensation data were not utilized because of the age of those data, the lack of correction for significant differences between the regional economy and the national economy, and dissimilar terms of service (reporting of annual salaries for 9-month contracts nationally vs. 12-month contracts for chiropractic faculty).

Wage data for comparison to chiropractic faculty were obtained from three sources. Mean and median local and national wages by occupation were obtained from the US Bureau of Labor Statistics.[3,4] The wage data used were collected in April 2005, which is contained within the most recent fiscal year for which institutional data were available. The second source of data was the American Association of University Professors (AAUP), a respected faculty advocacy group.[5] The third was the IPEDS,[1] which provided information on salaries at other chiropractic colleges.

RESULTS

During the 2005/06 year, there were 30 full-time faculty members at the LACC whose primary area of responsibility was teaching. Data from all such faculty are included in these results.

Comparison of data sources for scholarly productivity is summarized in Table 1. Chiropractic faculty assessed in this study were far less productive with respect to all reported forms of scholarly activity and in comparison to all segments of postsecondary education included in the 1999 National Study of Postsecondary Faculty.[2] Scholarly productivity by chiropractic faculty for all forms of reported scholarship were roughly one-tenth that of full-time teaching faculty at private not-for-profit doctoral institutions. Surprisingly, no publications produced at LACC during the period of reporting were produced by faculty members with a PhD degree.

Comparison of data sources for teaching work load, expressed as contact hours per week, is summarized in Table 2. Teaching work loads of assessed chiropractic faculty were 2.7 times that of comparable institutions in higher education in the United States, were significantly higher than all segments of postsecondary education in the United States, and were 3.5 times greater than the maximum teaching load at the graduate level proposed by the American Association of University Professors.

Comparison of faculty salaries at LACC to salaries at other institutions is summarized in Table 3. There were 15 chiropractic colleges reporting salary data to IPEDS. The greatest differences between LACC salaries and other institutions, by rank, were at the instructor and professor levels (87% and 108% of national averages, respectively). Middle ranks were essentially consistent with national averages. The average salary at LACC was 115% of the national

Table 1. Scholarly Productivity

Institution type	Refereed or juried publications	Nonrefereed or nonjuried publications	Published review of materials	Books, monographs, and reports	Presentations and exhibits
Private not-for-profit doctoral	3.4	2.0	1.4	1.0	9.9
Public 2-year	0.6	0.9	0.3	0.6	5.0
LACC	0.4	Unknown	0	0.2	0.9

Note: Based on average number of publications and presentations in the past 2 years by full-time instructional faculty and staff whose principal activity is teaching, by institution type.
Source: National averages are obtained from the US Department of Education, National Center for Education Statistics, 1999 National Study of Postsecondary Faculty (NSOPF:99), Table 28. These figures are from 1998 reporting. LACC data are from the 2004 and 2005 annual performance appraisals for all full-time faculty members.

Table 2. Teaching Work Load

Institution type	Private not-for-profit doctoral	Public 2-year	LACC
Maximum contact hours per week[a]	9	12	N/A
Average contact hours per week	9.7	18.2	21.0
Annual weeks of instruction	30–36	36	45
Maximum contact hours per year	270–324	432	N/A
Average contact hours per year[b]	349	655	945
Average teaching work load, annual, as a percentage of private not-for-profit doctoral average	–	188%	271%
Average teaching work load, annual, as a percentage of public 2-year average	53.3%	–	144%
Average teaching work load, annual, as a percentage of chiropractic average	34.0%	63.8%	–
Average teaching work load, as a percentage of AAUP recommendations	108%	152%	350%

[a] Based on American Association of University Professors (AAUP) Policy on Faculty Workload. There are no policies or regulations establishing a maximum teaching load at the chiropractic institution under study.
[b] Based on 36 weeks of instruction. This is a high estimate, as some such institutions are on the quarter schedule and have only 30 weeks of instruction.
Source: National averages are obtained from the US Department of Education, National Center for Education Statistics, 1999 National Study of Postsecondary Faculty (NSOPF:99) and are based on 1998 reporting. Chiropractic faculty work load data were obtained from the 2005–06 manpower allocation reports of the institution under study.

Table 3. Average Full-Time Faculty Salaries at Chiropractic Colleges, 2004/05 Academic Year

Academic rank	Average of institutional reporting, equated 9-month contract	Average of institutional reporting, equated 12-month contract	*n*, reporting institutions	Average LACC salaries, equated 9-month contract	Average LACC salaries, equated 12-month contract	LACC as a percentage of average institutional reporting
Instructor	$34,805.64	$42,969.92	11	$30,151.00	$37,223.46	87%
Assistant professor	$39,062.93	$48,225.84	14	$38,422.00	$47,434.57	98%
Associate professor	$45,679.21	$56,394.09	14	$47,776.00	$58,982.72	105%
Professor	$51,532.71	$63,620.63	14	$55,836.00	$68,933.33	108%
All ranks	$42,752.57	$52,780.95	14	$48,975.00	$60,462.96	115%

Source: Integrated Postsecondary Education Data System (IPEDS), US Department of Education, National Center for Education Statistics. The average of institutional reporting excludes LACC reporting. IPEDS salary data are available equated to a 9-month contract. The equated 12-month contract amounts are derived by dividing 9-month reporting by a factor of 0.81.

average for chiropractic faculty at other institutions.

Comparison of chiropractic faculty salaries nationwide to national occupational norms is summarized in Table 4. Chiropractic faculty earned less than all other segments of education. Earnings were slightly lower than for elementary and secondary educators. Unspecified postsecondary educators and health specialty educators earned approximately 1.5 and 1.8 times the salary of chiropractic educators, respectively. Nationally, wages for chiropractic faculty were midway between "public transportation attendant" (73%) and "registered nurse" (123%).

Comparison of faculty salaries from institutional records at the LACC to regional occupational norms is summarized in Table 5. All regional segments of education (elementary, secondary, and postsecondary) were at very similar wage rates to each other and were approximately 150% of the wage earned by chiropractic faculty. Local wages for chiropractic faculty were midway between "industrial machinery repair" (74%) and "public transportation attendant" (126%).

Table 4. Chiropractic Faculty Salaries as Compared to Average Salaries for Other Occupational Settings

Occupation	Mean hourly wage	Mean hourly wage as a percentage of chiropractic faculty wage	Mean annual salary	Mean annual salary as a percentage of chiropractic faculty salary
Food service worker	$8.58	41%	$17,840.00	41%
Bank teller	$10.30	50%	$21,420.00	50%
Retail salesperson	$11.03	53%	$22,930.00	53%
Assemblers	$14.14	68%	$29,410.00	68%
Public transportation attendant	$15.09	73%	$31,390.00	73%
Industrial machinery repair	$19.28	93%	$40,090.00	93%
Chiropractic faculty	$20.75	100%	$43,167.00	100%
Elementary school teachers	–	–	$45,670.00	106%
Police	$22.20	107%	$46,480.00	108%
Secondary school teachers	–	–	$48,420.00	112%
Registered nurse	$26.06	126%	$56,210.00	130%
Faculty, other postsecondary	–	–	$63,920.00	148%
Health specialty teachers, postsecondary	–	–	$76,720.00	178%
Aerospace engineer	$38.68	186%	$80,460.00	186%
Pharmacist	$40.56	195%	$84,370.00	195%
Lawyer	$52.30	252%	$108,790.00	252%
All occupations	$17.80	86%	$37,020.00	86%

Note: Chiropractic wage data are for the 2004/05 academic year. Wage data for other occupations were obtained from the US Bureau of Labor Statistics, National Compensation Survey, May 2004. All percentages represent comparison to wages of chiropractic faculty.

Comparison of chiropractic faculty salaries across the United States to national averages for faculty at private doctoral institutions by academic rank is summarized in Table 6 and demonstrates modest wage disparity at the instructor level (87% of salary at private doctoral institutions) and very significant disparities at all higher ranks, increasing with increase in rank to only 41% for professors. Overall, average salaries for chiropractic faculty are only 46% of the national average at private doctoral institutions. Comparison of LACC faculty salaries to national averages for faculty at private doctoral institutions by academic rank is summarized in Table 7 and shows a wage disparity that is very similar to that seen with regional economic data. Overall, average salaries for the LACC faculty are only 77% of the national average at private doctoral institutions. Financial compensation also comes in the form of retirement contributions by employers. Nonmedical retirement benefits for full-time faculty at LACC are 5% of salary, as compared to an average of approximately 10% within other sectors of higher education.[5]

Reporting of average LACC faculty salaries over the decade spanning September 1995 to September 2005 is summarized in Table 8. Average salaries are reported both in actual dollars for the year of reporting and as inflation-corrected 1995 dollars. For most years of reporting, there were neither cost-of-living adjustments nor merit-based salary increases; increases in average salary for such years are a result of new hires at above-average salary and/or salary increases associated with promotions in academic rank. Years of reporting that demonstrate a decrease in average salary prior to correction for inflation are a result of separation of faculty members with higher than average salary, rather than a decrease in wages for faculty.

DISCUSSION

The comparison of scholarly productivity between chiropractic faculty and the national averages for faculty in higher education is apparently straightforward. However, there is at least one potential source

Table 5. Chiropractic Faculty Salaries as Compared to Average Salaries for Other Occupational Settings Within the Local Regional Economy

Occupation	Regional mean hourly wage	Mean hourly wage as a percentage of faculty wage	Regional median hourly wage	Median hourly wage as a percentage of faculty wage
Food service worker	$9.68	33.9%	$8.25	29.0%
Bank teller	$10.39	36.4%	$10.20	35.9%
Assemblers	$11.65	40.8%	$10.00	35.2%
Inventory clerk	$13.16	46.1%	$12.50	44.0%
Industrial machinery repair	$21.17	74.2%	$21.65	76.2%
Chiropractic faculty	$28.55	100.0%	$28.41	100.0%
Registered nurse	$32.93	115.3%	$33.95	119.5%
Public transportation attendant	$36.06	126.3%	$32.79	115.4%
Secondary school teachers	$41.35	144.8%	$42.14	148.3%
Police	$41.66	145.9%	$31.45	110.7%
Elementary school teachers	$43.05	150.8%	$42.68	150.2%
Faculty, other postsecondary	$43.55	152.5%	$43.00	151.4%
Faculty, colleges, & universities	$44.98	157.5%	$42.39	149.2%
Pharmacist	$50.87	178.2%	$51.05	179.7%
Aerospace engineer	$52.23	182.9%	$52.25	183.9%
Lawyer	$72.33	253.3%	$51.34	180.7%
All occupations	–	–	$17.42	61.3%

Note: Chiropractic wage data are for the 2005/06 academic year. Wage data for other occupations were obtained from the US Bureau of Labor Statistics, Bulletin 3130-23. All percentages represent comparison to wages of chiropractic faculty.

Table 6. US Chiropractic Faculty Salaries as Compared to Average Salaries for Private Doctoral Institutions

Academic rank	Chiropractic average annual salary, 9-month equivalent	Average salary, US private doctoral institutions	Chiropractic faculty salary as a percentage of US average
Instructor	$34,418	$39,398	87%
Assistant professor	$39,020	$58,310	67%
Associate professor	$45,819	$82,456	56%
Professor	$51,820	$127,214	41%
All ranks	$43,167	$93,370	46%

Note: Wage data are for the 2004/05 academic year. Chiropractic salaries were obtained from the Integrated Postsecondary Education Data System (IPEDS), US Department of Education, National Center for Education Statistics; national averages for US private doctoral institutions were obtained from the American Association of University Professors (AAUP).

of distortion of these figures that cannot presently be estimated, and that is collaboration. When reporting productivity in terms of items per faculty member, there are two methods for calculating such figures. The first method is to collect information from individuals regarding how many items they completed in a given time period (as in the methods for this work). The second is to tally the total number of items of each type for an entire institution, and then divide by the number of faculty members. The first method inflates average productivity as compared to the second method in instances where multiple faculty members within an institution collaborate as authors or presenters. For example, if a hypothetical cohort of five faculty members at a single institution were to collaborate and publish a single article during a 1-year period, the first method would yield a publication average of 1 (each reported authorship

Table 7. LACC Faculty Salaries as Compared to National Average Salaries for Private Doctoral Institutions

Academic rank	Chiropractic faculty, *n*	LACC average annual salary, 9-month equivalent	Average salary, US private doctoral institutions	LACC faculty salary as a percentage of US average
Instructor	0	N/A	$46,510	–
Assistant professor	8	$39,793	$71,877	55%
Associate professor	10	$47,063	$84,419	56%
Professor	12	$54,523	$131,292	42%
All ranks	30	$48,108	$62,615	77%

Note: Wage data are for the 2005/06 academic year. National averages for US private doctoral institutions were obtained from the American Association of University Professors (AAUP).

of one article) and 0.2 (one article, five faculty) by the second method. In the context of the current work, this type of distortion is not a concern, because the National Center for Education Statistics also employs the methods used here.[2]

There was an earlier investigation of scholarly productivity performed by chiropractic faculty for the years 1993–1996,[6] but no attempt is made here to compare current assessment of scholarly productivity to that earlier work, for several reasons. The earlier work included data from both teaching faculty and research faculty, was based on a survey of faculty recall of activity rather than an actual catalogue of such activity, and may have included an inflation of reported publications from innocent miscategorization of works by reporting faculty. This last item refers to the fairly common habit of faculty to report as publications the abstracts of conference presentations, if those abstracts were published. Reporting of this type is absent from the data reported here for LACC faculty. In spite of these differences, the average values from the earlier work and the assessment of LACC faculty appear to be quite similar.

It is unknown how directly comparable the teaching work load as measured by contact hours per week might be between chiropractic faculty and other segments of higher education, or even between members of a chiropractic faculty. The work intensity of different types of teaching contact time is a complex variable, and considerable reflection is required in undertaking comparisons of contact hours from one educational setting to another. Typical types of activity that might be performed by chiropractic faculty include lead instruction, clinical instruction, and assisting in course. The amount of noncontact time required for instructional preparation, student assessment, and course administration varies considerably between these different activities, and no consideration of this variation in work load was considered in the present comparison, as there are no similar data available regarding the types of teaching activities that are typical elements of the assigned schedules of faculty in the nonchiropractic setting. Another factor with potential impact is the presence of teaching assistants and graduate students as participants in the teaching process in higher education. Adjunct teaching personnel of this type are not generally present at chiropractic colleges, and the work that such personnel would perform is assumed by the chiropractic faculty. Thus, while the contact hours for chiropractic faculty are much higher than those for nonchiropractic faculty, it is probable that those contact hours are not directly comparable as work load indicators. On the other hand, those additional contact hours should be considered as an impediment to completion of nonteaching work (eg, scholarship, service, and administrative tasks) and should still be viewed as significant. These questions highlight other potentially interesting topics for future inquiry.

It is clear, however, that the teaching work loads experienced by the chiropractic faculty assessed are excessive and pose significant impediments to educational excellence and significant risk of low quality of life for faculty. The AAUP *Statement on Faculty Workload*, revised in 2000, sets forth recommendations for maximum teaching loads. It defines the "maximum teaching loads for effective instruction at the undergraduate... level" as a "teaching load of twelve hours per week, with no more than six separate course preparations during the academic year," and "[f]or instruction partly or entirely at the graduate level, a teaching load of 9 hours per week," based on an academic year of not more than 30 weeks of classes.[7] The statement

Table 8. Changes in Salaries of Chiropractic Faculty, 1995–2005

Date	9/1/95	9/1/96	9/1/97	9/1/98	9/1/99	9/1/00	9/1/01	9/1/02	9/1/03	9/1/04	9/1/05
Average salary	$50,198	$49,596	$49,847	$53,664	$55,106	$57,025	$57,120	$55,824	$58,798	$59,227	$59,393
Delta %, salary	–	−1.2%	0.5%	7.7%	2.7%	4.4%	0.0%	−4.7%	3.4%	−1.7%	0.8%
Delta %, CPI	–	1.8%	1.4%	1.1%	2.3%	3.3%	3.3%	2.8%	3.0%	3.5%	4.4%
Delta %, 1995 dollars	–	−3.0%	−0.9%	6.6%	0.4%	1.1%	−3.3%	−7.5%	0.4%	−5.2%	−3.6%
Real terms, 1995	–	97.0%	96.1%	102.4%	102.8%	104.0%	100.6%	93.0%	93.4%	88.5%	85.4%
Average salary, 1995 dollars	$50,198	$48,692	$48,257	$51,421	$51,621	$51,714	$50,094	$47,555	$48,662	$47,314	$45,365

Note: Wage data from Human Resources records. Consumer price index changes (delta % CPI) are for the regional economy, and were obtained from the US Bureau of Labor Statistics, Bulletin 3130-23.

also recommends that "faculty should participate fully in the determination of workload, both initially and in all subsequent reappraisals." In clear distinction from these external standards, when administrators at LACC were asked to provide their opinions regarding appropriate teaching loads, there was unanimous agreement that the actual teaching loads reported here were the reasonable and desired work load. It is unknown whether these responses reflected ignorance of external educational standards or capitulation to limited resources.

Care and reflection must be exercised in comparing the salary and work load data regarding chiropractic faculty to data reported for other segments of higher education, as there are inherent qualitative differences in the faculty populations under consideration that impact these quantitative values. Salaries for chiropractic faculty are based on a 12-month teaching year, whereas other segments of faculty are often paid the reported annual wage for a 9-month or 10-month contract. This is the reasoning behind reporting chiropractic salaries here as 9-month contract equivalents, and it is presumed to be the reason that IPEDS uses this format.

Comparisons of LACC faculty to occupations within the local regional economy were based on hourly wages, and there are several assumptions included within this comparison. Although the diadactic curriculum is delivered in a total of 45 weeks, this was not used to calculate hourly wage figures for chiropractic faculty. This was because preclinical faculty members continue to work when courses are not in session, completing tasks related to course administration, scholarship, and institutional service. Clinical faculty members oversee patient care without respect to course schedules and have a genuine on-site year-round schedule. It is not known what number of weeks was used to determine the hourly wage of educators in the local economy, but the methodology employed was described as being based on "the hours an employee is scheduled to work in a year, exclusive of overtime".[3] It is therefore assumed that the Bureau of Labor Statistics accounted for the length of the academic year for local faculty. The use of a 40-hour week is assumed for chiropractic faculty and is a convention of convenience not based on any actual assessments of time on task. Data are available regarding the hours per week that faculty members in higher education spend on task,[2] and reported values are significantly in excess of 40 hours per week (53.3 hours per week on average for all faculty). However, such data

are based on the reporting of faculty perception of hours worked. Attempts to collect similar data at the institution under study yielded values for hours per week worked similar to those reported nationally, but also provided compelling evidence that a significant minority of faculty perceived their work time to be greater than the time actually spent on task (eg, comparing subjective reporting of teaching contact time with actual schedules). If the hours per week reported by the chiropractic faculty assessed or similar data from national surveys were used in place of the conventional 40-hour week, the hourly wages reported here for LACC faculty would be decreased by approximately 20%.

Careful scrutiny of comparison of annual salaries of the LACC faculty to other college/university faculties nationwide (by rank and overall) reveals a significant potential source of underestimating the local wage disparity. Annual salaries by rank were 45% to 58% lower than national norms in higher education by rank, but only 23% below national averages overall. This same effect is seen in comparing LACC data to national averages for chiropractic colleges. This seeming contradiction arises from a nearly complete absence of junior faculty at the institution assessed; no entry-level faculty had been hired for 6 years at the time of data collection for this study. This skewing of the faculty population toward senior ranks may serve to minimize the wage disparity between LACC teaching faculty and the other segments of education in the local regional economy.

Another source of potential reporting bias within chiropractic salary data from IPEDS is the increasing diversification of curricular offerings at chiropractic institutions. A fair number have added acupuncture programs, undergraduate degrees, or other programs to their offerings. Since IPEDS reporting is an aggregate of all salaries at reporting institutions, faculty from these other curricular offerings are included in such reporting. It is unknown whether the faculty in these nonchiropractic programs are compensated differently than chiropractic faculty.

Additionally, salaries within higher education may be higher than those at chiropractic colleges as an outcome of financially supported research activities. It is possible that faculty who bring grant money into their institutions receive greater compensation than those who do not. However, the data sources available for comparison do not provide information regarding compensation in relation to grant awards or research activity. The chiropractic faculty members assessed here do not include any research faculty, and there were no teaching faculty with research grants of any kind during the time period under consideration. Thus, if there is a relationship between research activity and salary in higher education, this could create a magnification of the reported wage disparities reported here between chiropractic faculty and other sectors of higher education. If there were significant economic benefits to faculty members from externally funded research activities, one would expect that there would be meaningful salary disparities between educational segments where such activity is common and those where it is entirely absent. Review of local economic data demonstrates salary parity between full-time faculty in elementary, secondary and postsecondary education, suggesting that this influence is insignificant or absent. However, such parity is not observed at the national level, with elementary and secondary educators essentially at the same level and significantly below postsecondary education. It appears that there is insufficient information to assert the probable presence or absence of this potential influence from the information presented here.

It would seem natural to conclude that the high teaching load for chiropractic faculty is related to their low level of scholarly productivity, and it is probable that this does represent a significant impediment to acceptable levels of scholarly activity. However, if this were the primary factor impeding research activity by chiropractic teaching faculty, one would predict that there would be an inverse relationship between teaching load and scholarly output. This was not observed. Typically, those with the lowest number of student contact hours were also those with the lowest level of scholarly productivity, and those with the highest scholarly productivity had average or above-average teaching loads. A comprehensive work on standards for faculty productivity states, "At four-year institutions, it is a generally accepted convention that if a faculty member did nothing but teach, the standard term teaching load is twelve teaching credits."[8] If one were to accept this recommendation, it would be both predictable and acceptable for the chiropractic faculty assessed to produce no scholarly products. That is an unacceptable standard, however, both within the educational community and as predictor of the future growth and health of the chiropractic profession.

There are numerous impediments to developing a research or scholarship culture within the chiropractic educational setting. Most chiropractic faculty

have no experience with complex research of any type, and essentially none have any experience applying for external funding. The prospect of engaging in scholarly productivity is a source of significant angst for faculty lacking pertinent experience, and there is a dearth of qualified mentors. Collegial review of works in progress is foreign to the culture of chiropractic faculty, and some have an unreasonable expectation that such activity should be compensated with authorship credit. Services of support or clerical staff are generally unavailable to teaching faculty at chiropractic institutions. Some institutions lack grant officers or other financial management employees with the skills and knowledge required to comply with the requirements of external funding agencies.

It should also be noted that all data reported here are quantitative in nature. Although there is assumed to be a significant relationship between teaching load and educational quality and between compensation and the ability of institutions to attract and retain high-quality faculty, meaningful assessments of quality within the educational sector of the chiropractic profession are also not currently available. The question of programmatic quality is both important and absent from the profession. The typical method of comparative programmatic assessment employed within the profession is reporting of the number of hours spent on particular subject areas or skills, and is devoid of any consideration of the quality of the educational experience or the outcomes of the educational process. Although these issues are not the topic of this work, they are also critical to the advancement of the profession and are long overdue for examination.

While the data presented here regarding scholarly productivity and work load cannot be generalized to the other chiropractic colleges in the United States, informal and anecdotal information obtained from colleagues at other institutions suggest that the working conditions experienced by the faculty assessed in this study are typical for chiropractic institutions. There may be temptation for proponents of a particular institution to use this study as an indictment of the health of the institution where it was conducted. Absent meaningful and systematic collection and reporting across the educational sector of the chiropractic profession, any such use of this work should be properly viewed as inappropriate. Rather, this work should be properly viewed as a wake-up call to educational administrators and leaders within the profession to abandon zero-sum competition between institutions and organizations, and instead to engage in frank acknowledgment and discussion of the serious challenges facing the educational sector of the profession and possible solutions.

If the findings here are indeed typical of the work environment across the profession, it would not be an exaggeration to assert that these conditions pose a very real risk to the long-term future of the profession. The profession needs to ensure that becoming a chiropractic educator is a viable career path or risk losing its productive faculty members. A loss of the profession's more industrious and brightest professors could inflict grave consequences with respect to ongoing maturation of the profession. If the profession continues to place responsibility for research and scholarship in the hands of a small community of scientists outside the educational sector, the scope of chiropractic research will be stunted, the financial health of the colleges will continue to be unsatisfactory, and future practitioners will have impaired skills in acquiring and interpreting scientific evidence.

CONCLUSIONS

Chiropractic faculty members have lower income, higher work loads, and less scholarly productivity when compared to other nonchiropractic institutions. Analysis of the salaries of the institution studied here show that faculty members make less per hour than many other occupations in the local economy, including some not requiring college training, and including all types of educators.

Received, July 25, 2006
Revised, August 31, 2006
Accepted, September 4, 2006
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