

# FGCU Faculty Salary Compression and Inversion Study



**Submitted to:**

Steve Belcher  
Special Assistant for Faculty Affairs  
Office of Academic Affairs  
Florida Gulf Coast University

**Submitted by:**

The Balmoral Group, LLC



**Responsible Office:**

341 North Maitland Avenue, Suite 100  
Maitland, FL 32751  
Tel: 407.629.2185, ext. 104 Fax: 407.629.2183  
Cell: 407.415.2964

**Contact Person:** Valerie Seidel

[vseidel@balmoralgroup.us](mailto:vseidel@balmoralgroup.us)

December 2011  
(Revised January 2012)

## Table of Contents

I.	Literature Review.....	1
II.	Rank Ratio Analysis.....	3
III.	Data and Models.....	5
IV.	Results.....	6
	Appendix A. Rank Ratio Comparisons between FGCU and Peer Groups by 2-Digit CIP .....	18
	Appendix B Predicted and Actual Salary Comparisons by 2-Digit CIP .....	31
	Works Consulted.....	38

## List of Tables and Figures

Table 1.	FGCU CIP Codes .....	7
Table 2.	University Wide Explanatory Variables .....	8
Table 3.	Health and Business Explanatory Variables .....	8
Table 4.	Linear Regression Results .....	15
Table 5.	Librarian Regression Results .....	17
Table 6.	Advisor Regression Results.....	17
Figure 1.	FGCU Rank Ratio Analysis .....	3
Figure 2.	CIP 51 Rank Ratio Analyses .....	4
Figure 3.	CIP 52 Rank Ratio Analyses .....	5
Figure 4.	Salary Comparison University-Wide .....	9
Figure 5.	Predicted Salary by Rank with Faculty Experience .....	10
Figure 6.	Predicted Faculty Salaries with Experience by Rank for CIP 51 .....	12
Figure 7.	Predicted Faculty Salaries with Experience by Rank for CIP 52 .....	13

# FGCU Faculty Salary Compression and Inversion Study

The Balmoral Group is pleased to present this Executive Summary Report for the analysis of salary compression and inversion at Florida Gulf Coast University (FGCU). Our analysis has relied on two separate but complementary modeling approaches: rank ratio analysis and regression analysis. The rank ratio analysis was used to identify potential compression and inversion at the 2-digit Classification of Instructional Programs (CIP) code level for each of FGCU's 25 2-digit CIP codes<sup>1</sup>. Peer group salary levels throughout this report are determined using CUPA survey results of 78 peer institutions. The regression analysis was used to statistically test whether identified compression and inversion were significant. Before summarizing the results of our analysis we briefly discuss the literature related to compression and inversion studies in section I. In section II we summarize our rank ratio analysis. In section III and IV we discuss our regression models and present their results.

## I. Literature Review

For the past two decades researchers have focused on the role of salary compression and its effects on wage differentials in higher learning institutions. Salary compression occurs when newly hired, or junior, faculty members receive a rate of pay that approaches, or is approximately equal to, the rate paid to faculty of higher, or senior, professional rank. A more extreme version of salary compression, salary inversion, arises when junior faculty members earn higher salaries than senior employees. Although in some instances salary compression, and particularly salary inversion, may be a form of wage discrimination, salary compression is not in itself a problem. Assuming that institutions value human capital, it is defensible to grant junior employees with specialized skills and teaching qualifications a higher salary than those with fewer credentials.

The classification of junior and senior faculty members is an important factor in constructing an appropriate compression model. A rather narrow definition by Snyder et al. (1992) defined junior members as individuals with less than one year of experience at a university, while Toutkoushian (1998) classified junior faculty as assistant professors with less than three years of service at a university and fewer than six years of professional experience in academia. Twigg et al. (2002), on the other hand, defined a junior faculty member as someone with fewer than three years university experience and fewer than three years professional experience before being hired. Another way to define members as junior faculty is to include not only assistant professors but also newly promoted associate professors and full professors. This process allows for both between-rank and within-rank comparisons. It should be noted, however, that tenure was a factor in these studies and only three faculty ranks, Assistant Professor, Associate Professor and Professor, were considered. These conditions differ from those at FGCU, which does not have a tenure system and includes four faculty ranks, Instructor, Assistant Professor, Associate Professor and Professor.

---

<sup>1</sup> CIP codes are codes assigned to classify instructional areas for benchmarking against national statistics, and are tracked by CUPA (College and University Professional Association for Human Resources).

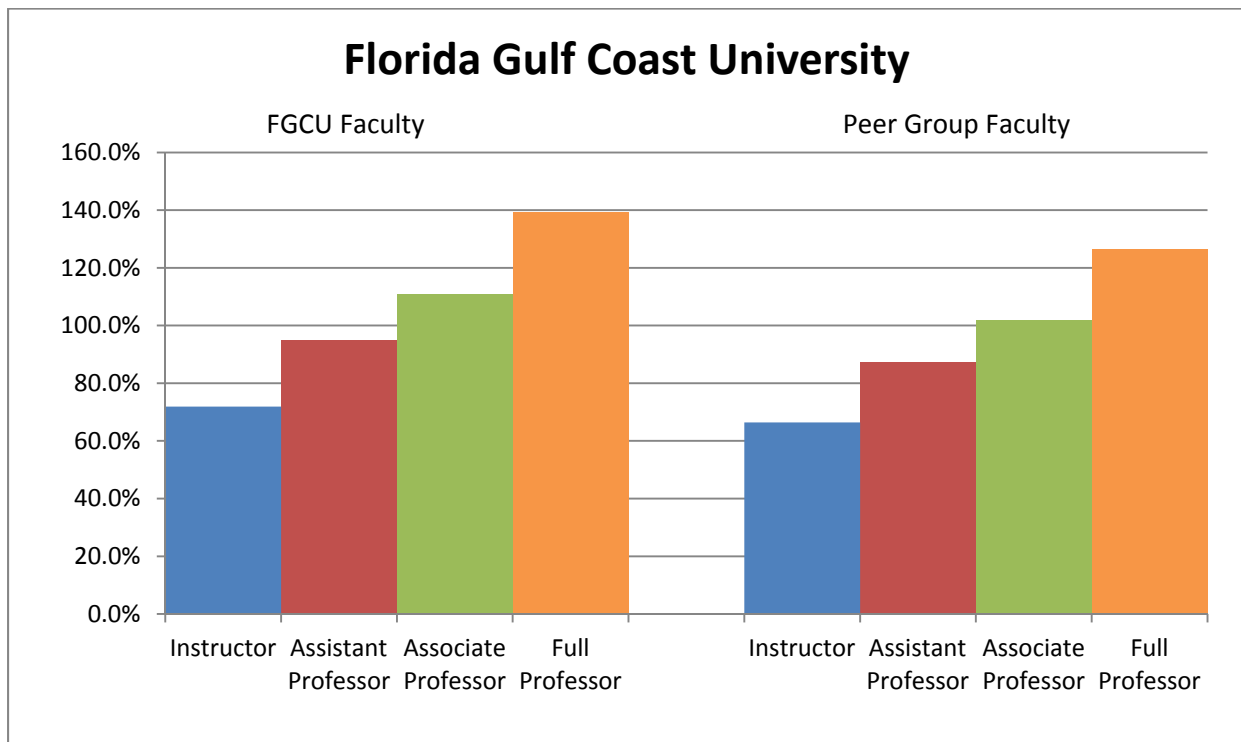
There are two methods of analysis most common to this type of study, rank ratio analysis and regression analysis. The rank ratio method compares mean salaries between ranks. Salary ratios are calculated by dividing the mean salary of each rank by the mean salary in a given discipline. Since the ratios are normalized with the same denominator, they can be compared to check for compression. Any ratio of a lower rank that approaches (or is greater than) the ratio of a higher rank displays symptoms of compression (or inversion). However, factors such as time in rank and tenure that may be significant determinants of salary differences are not included in the rank ratio analysis.

The regression method is able to control for these other factors when testing for salary compression or inversion. The independent variables determining salary that are typically incorporated into regression equations include rank, time in rank, and tenure. However, since FGCU does not have a tenure system, the tenure variable will not be included in statistical analysis. Market conditions can be represented by discipline and year of hire, while merit components are considered to be “institutionalized” into the measures of discipline, rank, and time in rank as by Snyder et al. (1992). CIP codes at the two digit level can be used as dummy independent variables to control for average salary differences across academic fields.

## II. Rank Ratio Analysis

Rank ratios were compared at the University level and by 2-digit CIP code. As shown in figure 1 below, a comparison of salaries by rank (Instructor, Assistant Professor, Associate Professor, and Full Professor) for all FGCU faculty members, without accounting for CIP, suggests salaries progressively increase as faculty members rise through the university ranks. Average salaries for Instructors and Assistant Professors are less than the overall average of all faculty members combined. Instructors earn less (on average) than Assistant professors. Average Salaries for Associate Professors and Full Professors are above the university average, with Full Professors earning (on average) more than Associate Professors.

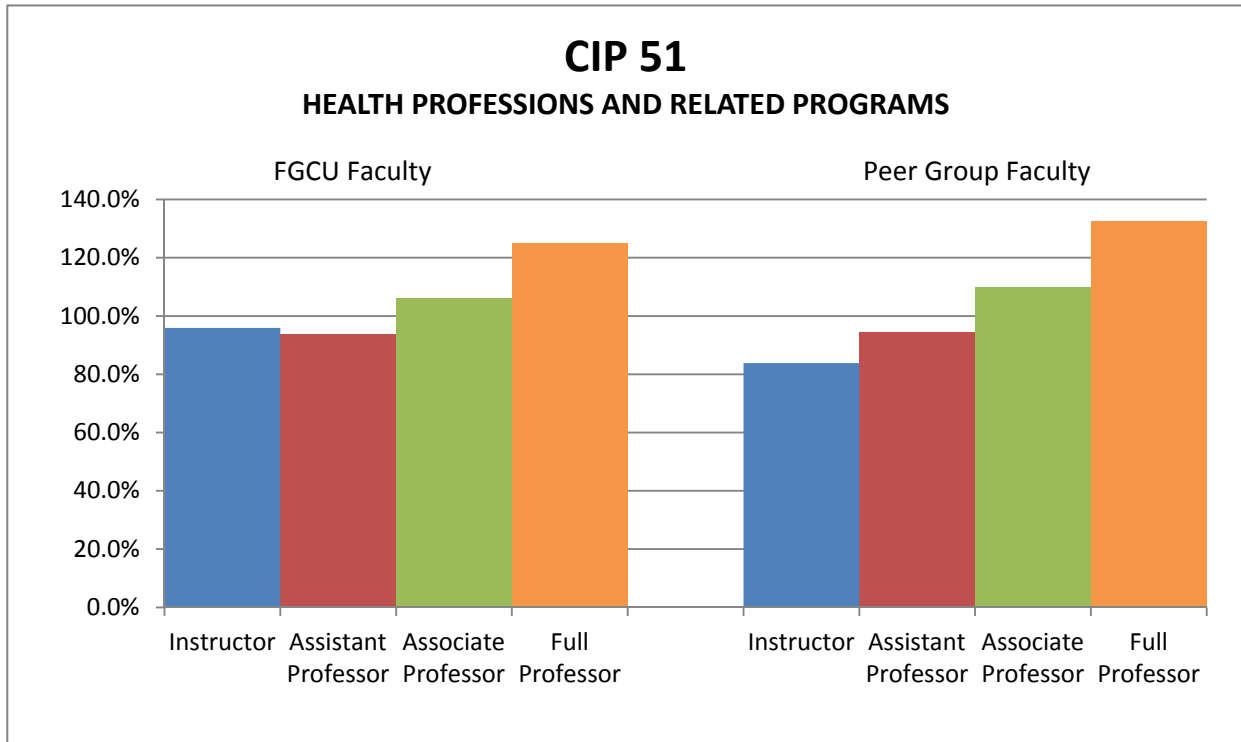
**Figure 1. FGCU Rank Ratio Analysis**



Comparing FGCU rank ratios to the faculty peer group data obtained through CUPA tells a similar story. Each successive university rank for faculty in the peer group earns (on average) a higher percentage of the group average salary, with Full Professors earning the highest salaries. Making these rank ratio comparisons at the 2-digit CIP tells a similar story for 23 out of the 25 CIP FGCU 2-digit CIP categories (see Appendix A).

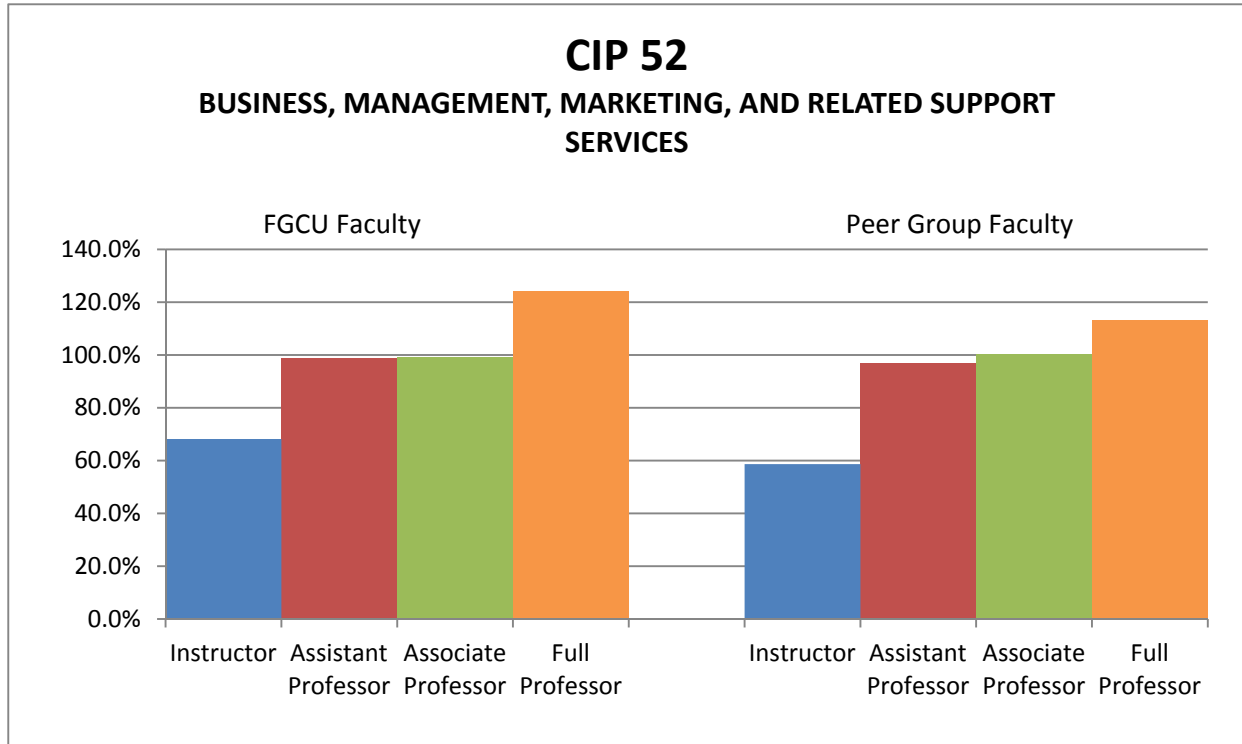
Rank ratio analysis for faculty in CIP 51, Health Professionals and Related Programs, shown in figure 2 below, suggests salary inversion is occurring at the ranks of Instructor and Assistant Professor, where instructors are (on average) earning a higher percentage of the CIP 51 average salary than faculty members at the rank of Assistant professor. The peer group comparison does not show this inversion, which suggests the FGCU differences in salary are not market driven.

**Figure 2. CIP 51 Rank Ratio Analyses**



Faculty salaries in the Business College, CIP 52, are not showing signs of inversion; however, as indicated in figure 3 below, there are signs of compression at the ranks of Assistant Professor and Associate Professor. Salary compression is also revealed in the peer group data for these faculty ranks, suggesting the compression at FGCU is market driven.

**Figure 3. CIP 52 Rank Ratio Analyses**



The salaries for FGCU faculty members in the remaining 23 2-digit CIP categories and Librarians do not appear to show signs of either compression or inversion. Peer group data are available through CUPA for many of these CIP codes. However, peer group comparisons cannot be made for faculty members in Agriculture, Agricultural Operations, and Related Services; Legal professions and Studies; and Multi/Interdisciplinary Studies. All rank ratios are presented in Appendix A.

### III. Data and Models

Data was assembled for all faculty, librarian reference staff and advisor staff at FGCU as of August 26, 2011. The following data was included in the analysis:

- Date of hire and years of FGCU service
- Current rank
- Years at rank
- Current 9-month salary

Descriptive statistics were generated to review any data anomalies and identify outliers or unusual trends that may require further investigation. Several rounds of data preparation were conducted to

ensure that all CIP code assignments and other classification processes were consistently applied to all data used.

Regression modeling was conducted to estimate linear and log models. Estimated models included a simple pooled model without controlling for faculty CIP; one-way fixed effects models that control for either faculty CIP, rank, or college that faculty belong; and two-way fixed effects models that controlled for either faculty CIP and rank, colleges faculty belong to and rank, and faculty CIP and college. The results of the best-fit model are summarized below.

#### **IV. Results**

Based on the results of the rank ratio comparisons, the following regression was estimated:

$$Y = \alpha C + BX + \gamma Z + \varepsilon$$

Where Y is actual 9-month equivalent salary, C is a vector of 25 CIP specific constants, X is vector of university-wide independent variables that explain salary differences at the University level, and Z is vector of independent variables for subcategories of CIP fields that may differ from University-wide salary patterns. Table 1 shows the specific CIP codes used as constants (vector C) in the regression analysis.

The regression model to identify statistical evidence of salary compression and inversion was estimated using appropriate fixed-effects controls for salary differences by 2-digit CIP, controls for additional differences in salary depending on years at rank, and specific controls for the rank of faculty members in the health professions (CIP 51) and Business College (CIP 52). The definitions for variables used in our model are described below.

**Table 1. FGCU CIP Codes**

<b>CIP-Two Digit Code</b>	<b>CIP Name</b>
<b>01</b>	AGRICULTURE, AGRICULTURE OPERATIONS, AND RELATED SCIENCES
<b>03</b>	NATURAL RESOURCES AND CONSERVATION
<b>05</b>	AREA, ETHNIC, CULTURAL, GENDER AND GROUP STUDIES
<b>09</b>	COMMUNICATION, JOURNALISM AND RELATED PROGRAMS
<b>11</b>	COMPUTER AND INFORMATION SCIENCES AND SUPPORT SERVICES
<b>13</b>	EDUCATION
<b>14</b>	ENGINEERING
<b>16</b>	FOREIGN LANGUAGES, LITERATURES, AND LINGUISTICS
<b>22</b>	LEGAL PROFESSIONS AND STUDIES
<b>23</b>	ENGLISH LANGUAGE AND LITERATURE/LETTERS
<b>24</b>	LIBERAL ARTS AND SCIENCES, GENERAL STUDIES AND HUMANITIES
<b>26</b>	BIOLOGICAL AND BIOMEDICAL SCIENCES
<b>27</b>	MATHEMATICS AND STATISTICS
<b>30</b>	MULTI/INTERDISCIPLINARY STUDIES
<b>31</b>	PARKS, RECREATION, LEISURE AND FITNESS STUDIES
<b>38</b>	PHILOSOPHY AND RELIGIOUS STUDIES
<b>40</b>	PHYSICAL SCIENCES
<b>42</b>	PSYCHOLOGY
<b>43</b>	HOMELAND SECURITY, LAW ENFORCEMENT, FIREFIGHTING AND RELATED PROTECTIVE SERVICE
<b>44</b>	PUBLIC ADMINISTRATION AND SOCIAL SERVICE PROFESSIONS
<b>45</b>	SOCIAL SCIENCES
<b>50</b>	VISUAL AND PERFORMING ARTS
<b>51</b>	HEALTH PROFESSIONS AND RELATED PROGRAMS
<b>52</b>	BUSINESS, MANAGEMENT, MARKETING, AND RELATED SUPPORT SERVICES
<b>54</b>	HISTORY GENERAL

Table 2 shows the university-wide variables used in the regression model: rank and years at rank. Based on the rank ratio analysis described in the previous Section, two CIP codes show the possibility of salary compression. These two CIP codes are 51 (Health Professions) and 52 (Business). Because these CIP codes coincide with two specific colleges with 46 and 62 faculty members respectively, it is possible to test whether salary patterns in these two CIP codes differ from the University as a whole. The goal is to ensure that any possible compression issues in these specific CIP codes are not masked by University-wide trends. Table 3 shows the variables that are used to analyze these two subgroups.

**Table 2. University Wide Explanatory Variables**

Variable	Description
DVASST	Assistant Professor
DVASOC	Associate Professor
DVPROF	Full Professor
YRSAR	Years of Experience at Rank
YRAST	Assistant Professor Years of Experience at Rank
YRASOC	Associate Professor Years of Experience at Rank
YRPROF	Full Professor Years of Experience at Rank
JRAST	Junior Assistant Professor

**Table 3. Health and Business Explanatory Variables**

Variable	Description
HASST	Health (51) Assistant Professor Years at Rank
HASOC	Health (51) Associate Professor Years at Rank
HPROF	Health (51) Full Professor Years at Rank
HJASST	Health (51) Junior Assistant Professor
BASST	Business (52) Assistant Professor Years at Rank
BASOC	Business (52) Associate Professor Years at Rank
BPROF	Business (52) Full Professor Years at Rank
BJASST	Business (52) Junior Assistant Professor
DBUSHI	High Salaried Business Subgroups (5203, 5208)

The results of the regression model are shown in table 4 at the end of this section. The model's explanatory variables and estimates are further divided into five detailed groupings of factors that were hypothesized to affect faculty salaries:

- University wide faculty rank variables,
- University wide years at rank variables,
- Rank variables for faculty in CIP 51 (Health professions),
- Rank variables for faculty in CIP 52 (Business), and
- Variables indicating "junior" assistant professors with 3 years of experience or less.

Our results are discussed separately for:

1. Faculty members in disciplines other than business and health professions,
2. Faculty members in health professions, and
3. Faculty members in business disciplines.

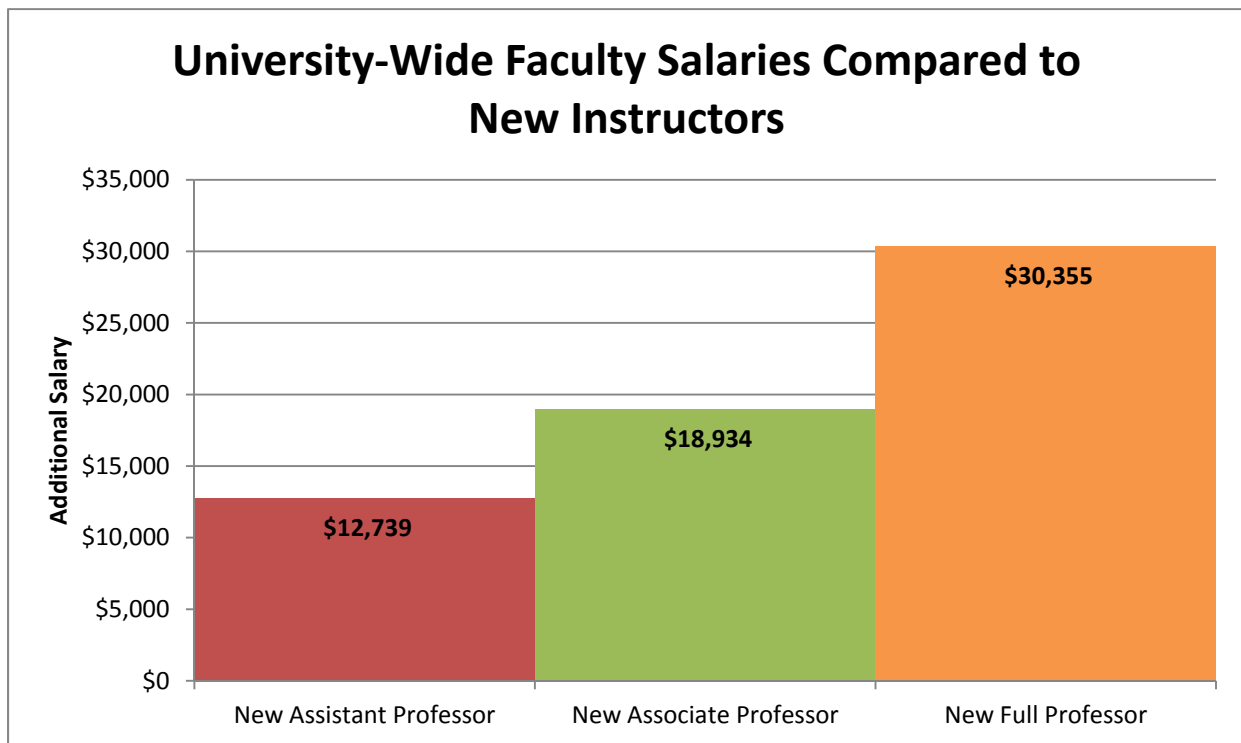
The effects of junior faculty status are discussed with each respective faculty cohort.

Separate regression models for Librarians and Advisors were also estimated. The regression models are discussed at the end of this section.

**Model results for FGCU Faculty in Disciplines other than Health Professions and Business**

Comparisons of rank variables alone are similar to rank ratio comparisons, with the added benefit of statistical measures of significance. Our faculty rank variables include indicators for each faculty member's CIP classification, and variables indicating each faculty member's rank above instructor. The model also includes a separate variable for the number of years each faculty member has held their current rank. The coefficients for the CIP classification measure the average salary of new instructors. The variable indicating that a faculty member is an assistant professor (DVASST) plus the variable indicating junior status (JRAST) measures the additional salary that new assistant professors make above instructors. Adding these two coefficient values \$14,177 and \$-1,438 suggests that, on average, new assistant professors make \$12,739 more than instructors. The variable indicating that a faculty member is an associate professor (DVASOC) measures the additional salary that new associate professors make above instructors. The regression results suggest that associate professors make \$18,934 more than instructors. Subtracting the coefficient for new assistant professors (\$12,739) from \$18,934 suggests that new associates earn \$6,195 more than new assistant professors. The variable indicating that a faculty member is a full professor (DVPROF) measures the additional salary that new full professors make above instructors. On average, full professors starting salaries are \$30,355 above instructors, \$17,616 above new assistant professors, and \$11,421 above new associate professors. These salary differences are illustrated in figure 4 below. Each of these differences is statistically significant at the conventional 5% level, indicating that salaries across ranks are not compressed at the university level, when experience is not considered.

**Figure 4. Salary Comparison University-Wide**

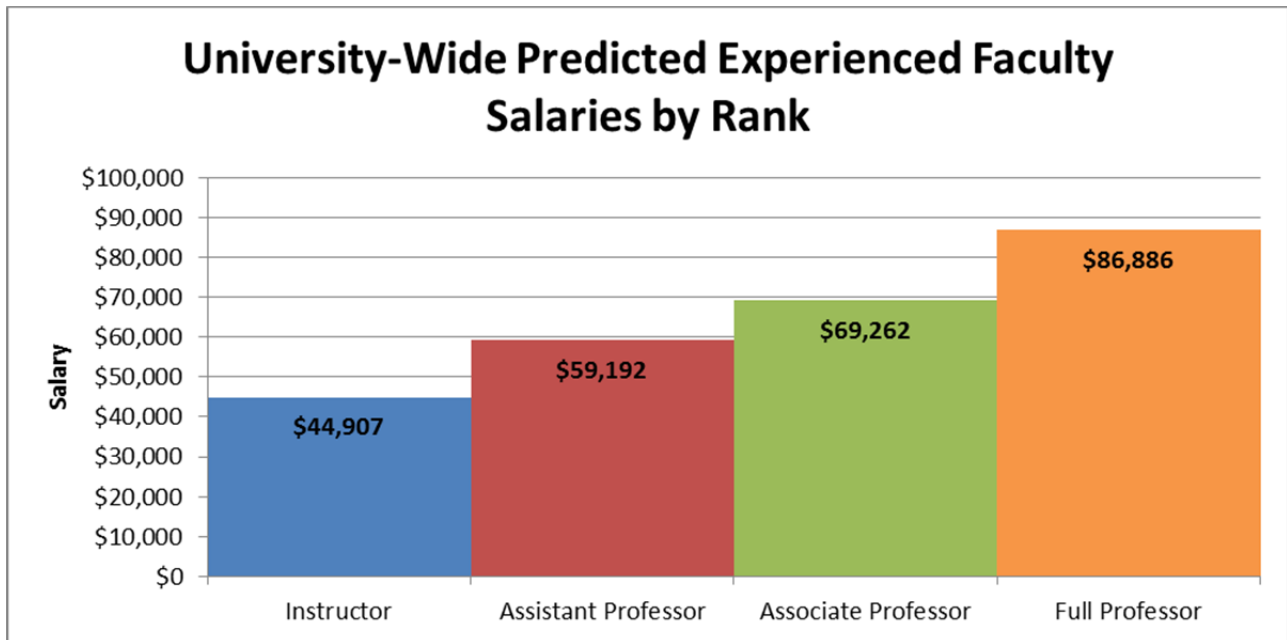


The years at rank variables measure the additional salary faculty members receive for each year of experience at their current rank. The variable YRSAR measures the additional salary that instructors

receive for each year experience. The model estimates instructors receive \$66 less for each year, but this estimate is not statistically significantly different from zero, which suggests that there is no discernible pattern of salary increase for experience among instructors. YRAST measures the additional annual increase in salary that assistant professors earn above instructors. The additional salary that assistant professors earn for each year at that rank is calculated as  $YRSAR + YRAST = \$-484$ , which is not statistically different from zero. The additional salary increases for year of experience at the ranks of associate professor and full professor are calculated in a similar way. The additional salary that each year of experience yields for associate professors is calculated as  $YRSAR + YRASOC = \$603$ , and for full professors  $YRSAR + YRPROF = \$1,266$ . The increases in salary for associate professors and full professors are both statistically significant at the 5% level.

These estimates imply that additional years of experience are rewarded at an increasing rate as rank increases. Taken together with the significant increases in salary for increasing rank of new faculty members, the increases in salary for additional years of experience also indicate that salary inversion is not occurring in university-wide disciplines with the possible exceptions of the health (CIP 51) and business (CIP 52) professions. Figure 5 shows average predicted salaries by rank with experience accounted for in the model.

**Figure 5. Predicted Salary by Rank with Faculty Experience**



**Model Results for Faculty in Health Professions Disciplines**

We included separate variables for rank in health professions (CIP 51) and business (CIP 52) because the rank ratio analysis suggests there is salary inversion occurring in CIP 52 and compression in CIP 52. Model results for these two disciplines are discussed next.

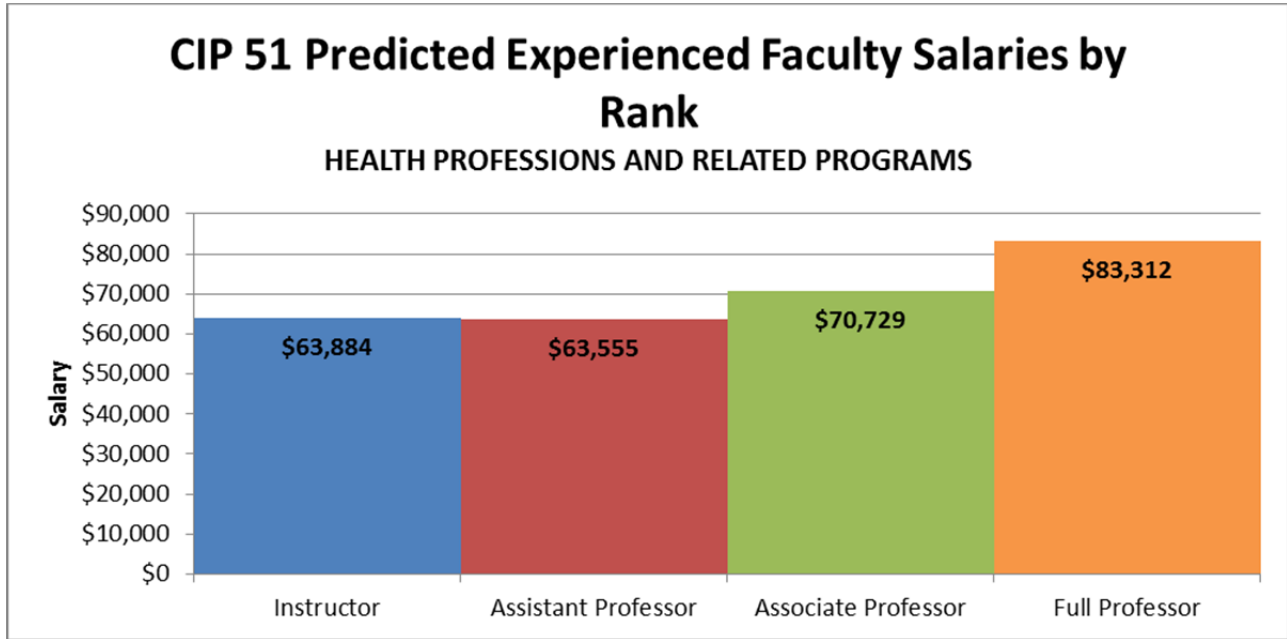
The three coefficients for faculty members in health professions, CIP 51, (HASST, HASOC, and HPROF) respectively measure the additional pay that new assistant professors, new associate professors, and

new full professors in CIP 51 earn above new assistant professors, new associate professors, and new full professors at FGCU. All of these three coefficients have negative signs, which tells us that increased salary for higher ranks in CIP 51 are less than those for the average FGCU faculty.

After controlling for other factors that determine salary, the average salary for instructors in health professions is estimated to be \$64,027. The average salary increase for new assistant professors is  $HASST + DVASST + JRAST + HJASST = \$-3,258$ , which would imply new assistant professors in health professions are earning less than new instructors. This is the result that the rank ratio analysis suggested. However, this difference is insignificant and we conclude there is not a statistical difference between salaries of new instructors and assistant professors. Therefore, salary inversion is not supported statistically, but the existence of salary compression cannot be rejected when experience is not considered. New associates in health professions earn on average  $HASOC + DVASOC = \$3,463$  above instructors, which is \$6,720 above new assistant professors in health professions. These salary differences are also statistically insignificant, indicating that salary compression cannot be rejected when experience is not considered. Finally, new full professors in health professions earn  $HPROF + DVPROF = \$7,236$  above instructors, which is \$3,772 above new associate professors in health professions and also insignificant, indicating once again that salary compression cannot be rejected when experience is not considered.

Taking experience into account when comparing salary differences between assistant professors and associate professors, and between assistant professors and full professors, changes indications of salary compression. Figure 6 illustrates salary differences for experienced health faculty. As above, salary compression between instructors and junior assistant professors cannot be rejected. However, assistant professors are now shown to earn statistically significant lower salaries than their experienced senior colleagues. Consequently, salary compression between assistant professors and associate professors is rejected at a 10% level. Similarly salary compression is rejected for associate and full professors at the 10% level. This result is expected given the significant increases in salary for years of service at the ranks of associate and full professor.

Figure 6. Predicted Faculty Salaries with Experience by Rank for CIP 51



**Model Results for Faculty in Business Disciplines**

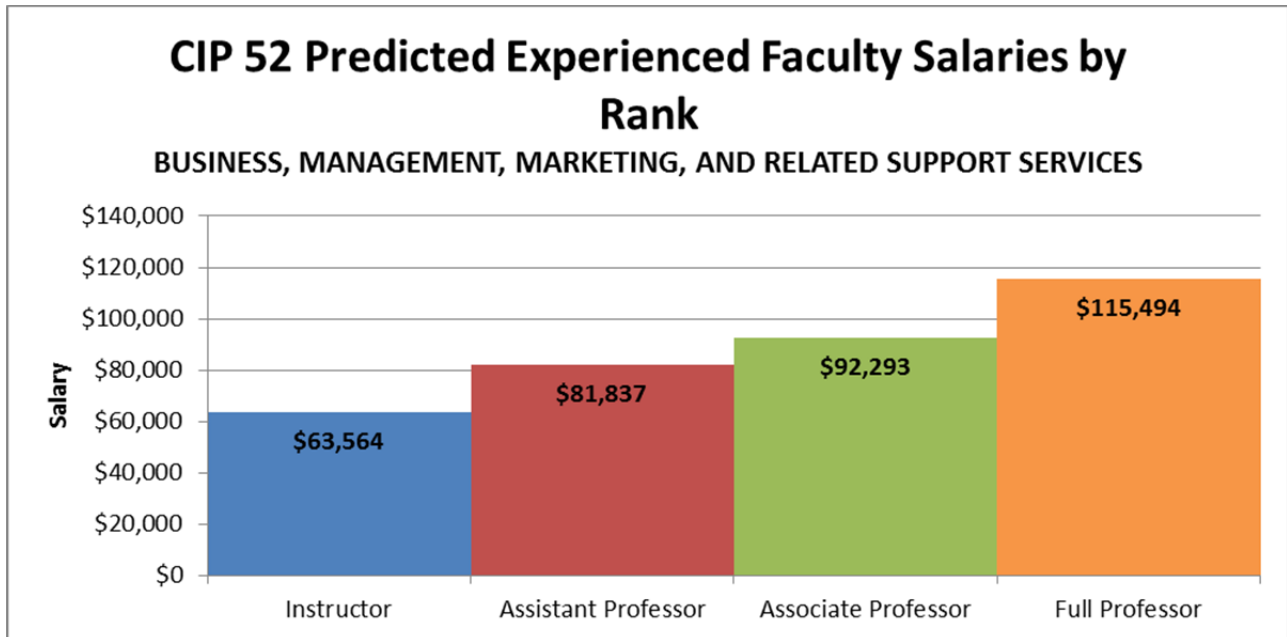
There are four coefficients that were used to describe faculty members in business, CIP 52, (BASST, BASOC, BPROF, and DBUSHI). The coefficients BASST, BASOC, and BPROF respectively measure the additional pay that new assistant professors, new associate professors, and new full professors in CIP 52 earn above new assistant professors, new associate professors, and new full professors. The coefficient DBUSHI is a control variable that indicates faculty in finance and accounting – high-paid business sub-disciplines. Each of these business variables is positive and statistically significant, which indicates that business professors at each rank earn statistically higher salaries than other FGCU professors at each rank.

Faculty members in finance and accounting earn DBUSHI = \$20,375 more than business faculty at all ranks in other sub-disciplines in business. The average salary for instructors in business disciplines other than finance and accounting is \$57,588. The average salary increase for new assistant professors in non-finance and non-accounting business disciplines is BASST + DVASST + JRAST + BJAST = \$32,268. New associates earn on average BASOC + DVASOC = \$27,505 above new instructors, which is \$4,763 below new assistant professors. However, this difference in salary between new associate professors and new assistant professors is insignificant; indicating that salary inversion is not supported, but salary compression between new assistants and new associates cannot be rejected when experience is not considered. Finally, new full professors in non-finance and non-accounting business earn BPROF + DVPROF = \$46,724 above instructors, which is \$19,219 above new associate professors in the non-finance and non-accounting business disciplines. Salary compression is rejected for professors relative to lower level ranks at the 5% level.

When comparing associate salaries to assistant salaries that include experience effects, there is no significant difference, indicating that salary compression for these ranks cannot be rejected. For associate professors versus full professors salary inversion and compression are rejected at the 5% level.

The figure below illustrates these salary differences. Figure 7 compares the salaries of Business faculty when both rank and experience are included. It shows that when experience is accounted for, salaries increase by rank. However, for assistant versus associate professors, the increased differential is not statistically sufficient to reject salary compression. For associate professor versus full professor, the increased salary is sufficient to reject compression.

**Figure 7. Predicted Faculty Salaries with Experience by Rank for CIP 52**



**Librarian Salary Analysis**

The salary structure of librarians is analyzed using the regression model summarized in table 5. Results are compared to CUPA data for benchmark analysis. Regression results are expressed as predicted salaries for each CUPA job category. The regression model explains salary structure very well, with an R-squared of 97%. The benchmark comparisons with CUPA data show FGCU salary levels that are very similar to benchmark values. Across all librarians the ratio of predicted FGCU salaries to the appropriate CUPA benchmark shows that FGCU salaries exceed benchmark values by an average of 3%. Because the rank of FGCU librarians may be over-represented by professors relative to assistant professors, which would increase the overall average, the predicted salaries of associate professors are compared to benchmark values for the appropriate CUPA job category. This analysis shows that on average FGCU salaries exceed CUPA mean salaries by one percent.

Further analysis shows that all assistants are on average 25% below the CUPA mean for their job categories. Full professor are on average 26% above CUPA means for their job categories. The differences for assistant and full professor relative to CUPA means are likely due to CUPA reporting one mean value for each job category, which is aggregated across ranks. The implication is that the most appropriate comparison is between associate professor salaries and CUPA mean salary. Alternatively, if

FGCU has a similar rank structure as other universities (similar percentages of assistant, associate, and full professors) then the mean predicted salary across all ranks would also be appropriate to compare to CUPA benchmarks.

Our regression model for librarians is reported in table 5 at the end of this section. As expected from the rank ratio analysis, the results do not suggest salary compression or inversion for university librarians. Associate university librarians' salaries are on average \$10,724 above those of assistant librarians. Full university librarians' salaries are on average \$13,383 above associate librarians. The model also suggests that additional years of service do not increase librarians' salaries. The coefficient for years of service, YRSAR = -\$1,335 and is not statistically different from zero.

### **Academic Advisor Salary Analysis**

The regression model used to analyze the salary structure of Academic Advisors is reported in Table 6 at the end of this section. The model suggests that advisors' compensation is determined by their rank for 24 out of the 25 2-digit CIP codes. The model estimates that faculty with rank Advisor II earn, on average, an extra \$4,500 per year. The model also suggests that advisors do not receive significant increases in salary for additional years of service, averaging \$243/year, but the coefficient YRSAR is not statistically significant.

Tables 4 through 6 present regression results for all regressions estimated. Other functional forms (quadratic and logarithmic) were also tested, but did not substantially alter reported results. Any additional explanatory value from these models was not sufficient to warrant the added complexity of interpretation.

**Table 4. Linear Regression Results**

Variable	Description	Coefficient	Standard Error	t-ratio	p-value
<b>Faculty Rank</b>					
<b>CIP 01</b>	Instructor in AGRICULTURE, AGRICULTURE OPERATIONS, AND RELATED SCIENCES	39,606	6,418	6.1707	
<b>CIP 03</b>	Instructor in NATURAL RESOURCES AND CONSERVATION	43,603	3,092	14.1007	
<b>CIP 05</b>	Instructor in AREA, ETHNIC, CULTURAL, GENDER AND GROUP STUDIES	36,540	6,563	5.5675	
<b>CIP 09</b>	Instructor in COMMUNICATION, JOURNALISM AND RELATED PROGRAMS	37,480	2,466	15.1999	
<b>CIP 11</b>	Instructor in COMPUTER AND INFORMATION SCIENCES AND SUPPORT SERVICES	67,768	5,426	12.4900	
<b>CIP 13</b>	Instructor in EDUCATION	40,444	2,056	19.6737	
<b>CIP 14</b>	Instructor in ENGINEERING	63,567	2,804	22.6708	
<b>CIP 16</b>	Instructor in FOREIGN LANGUAGES, LITERATURES, AND LINGUISTICS	36,617	4,538	8.0691	
<b>CIP 22</b>	Instructor in LEGAL PROFESSIONS AND STUDIES	39,959	4,694	8.5129	
<b>CIP 23</b>	Instructor in ENGLISH LANGUAGE AND LITERATURE/LETTERS	35,015	2,035	17.2090	
<b>CIP 24</b>	Instructor in LIBERAL ARTS AND SCIENCES, GENERAL STUDIES AND HUMANITIES	36,493	6,426	5.6789	
<b>CIP 26</b>	Instructor in BIOLOGICAL AND BIOMEDICAL SCIENCES	39,105	2,024	19.3241	
<b>CIP 27</b>	Instructor in MATHEMATICS AND STATISTICS	38,919	2,196	17.7247	
<b>CIP 30</b>	Instructor in MULTI/INTERDISCIPLINARY STUDIES	39,871	6,531	6.1047	
<b>CIP 31</b>	Instructor in PARKS, RECREATION, LEISURE AND FITNESS STUDIES	48,838	5,407	9.0320	
<b>CIP 38</b>	Instructor in PHILOSOPHY AND RELIGIOUS STUDIES	39,230	4,338	9.0436	
<b>CIP 40</b>	Instructor in PHYSICAL SCIENCES	38,403	2,279	16.8472	
<b>CIP 42</b>	Instructor in PSYCHOLOGY	39,690	2,917	13.6065	
<b>CIP 43</b>	Instructor in HOMELAND SECURITY, LAW ENFORCEMENT, FIREFIGHTING AND RELATED PROTECTIVE SERVICE	41,747	3,201	13.0423	
<b>CIP 44</b>	Instructor in PUBLIC ADMINISTRATION AND SOCIAL SERVICE PROFESSIONS	41,747	2,668	15.6484	
<b>CIP 45</b>	Instructor in SOCIAL SCIENCES	36,732	2,865	12.8193	
<b>CIP 50</b>	Instructor in VISUAL AND PERFORMING ARTS	36,871	2,435	15.1441	
<b>CIP 51</b>	Instructor in HEALTH PROFESSIONS AND RELATED PROGRAMS	64,027	2,336	27.4129	
<b>CIP 52</b>	Instructor in BUSINESS, MANAGEMENT, MARKETING, AND RELATED SUPPORT SERVICES	57,588	3,101	18.5717	
<b>CIP 54</b>	Instructor in HISTORY GENERAL	37,607	3,177	11.8365	
<b>DVASST</b>	Assistant Professor	14,177	2,954	4.8000	0.0000
<b>DVASOC</b>	Associate Professor	18,934	2,028	9.3350	0.0000

<b>DVPROF</b>	Full Professor	30,355	2,407	12.6100	0.0000
<b><u>Years at Rank</u></b>					
<b>YRSAR</b>	Years of Experience at Rank	(66)	457	(0.1440)	0.8858
<b>YRAST</b>	Assistant Professor Years of Experience at Rank	(418)	641	(0.6520)	0.5145
<b>YRASOC</b>	Associate Professor Years of Experience at Rank	668	499	1.3380	0.1818
<b>YRPROF</b>	Full Professor Years of Experience at Rank	1,331	526	2.5310	0.0118
<b><u>Health Professions</u></b>					
<b>HASST</b>	Health (51) Assistant Professor Years of Experience	(9,901)	4,647	(2.1310)	0.0337
<b>HASOC</b>	Health (51) Associate Professor Years of Experience	(15,472)	3,884	(3.9830)	0.0001
<b>HPROF</b>	Health (51) Full Professor Years of Experience	(23,120)	5,393	(4.2870)	0.0000
<b><u>Business</u></b>					
<b>BASST</b>	Business (52) Assistant Professor Years of Experience	12,186	5,294	2.3020	0.0219
<b>BASOC</b>	Business (52) Associate Professor Years of Experience	8,570	3,811	2.2490	0.0251
<b>BPROF</b>	Business (52) Full Professor Years of Experience	16,369	4,090	4.0020	0.0001
<b>DBUSHI</b>	High Salaried Business Subgroups (5203, 5208)	20,375	2,729	7.4670	0.0000
<b><u>Junior Faculty (3 years or less experience)</u></b>					
<b>JRAST</b>	Junior Assistant Professor	(1,438)	2,510	(0.5730)	0.5670
<b>BJAST</b>	Business (52) Junior Assistant Professor	7,344	5,278	1.3910	0.1649
<b>HJAST</b>	Health (51) Junior Assistant Professor	(6,096)	5,809	(1.0500)	0.2946
<b>R<sup>2</sup> = 0.848</b>					
<b>Observations = 407</b>					

**Table 5. Librarian Regression Results**

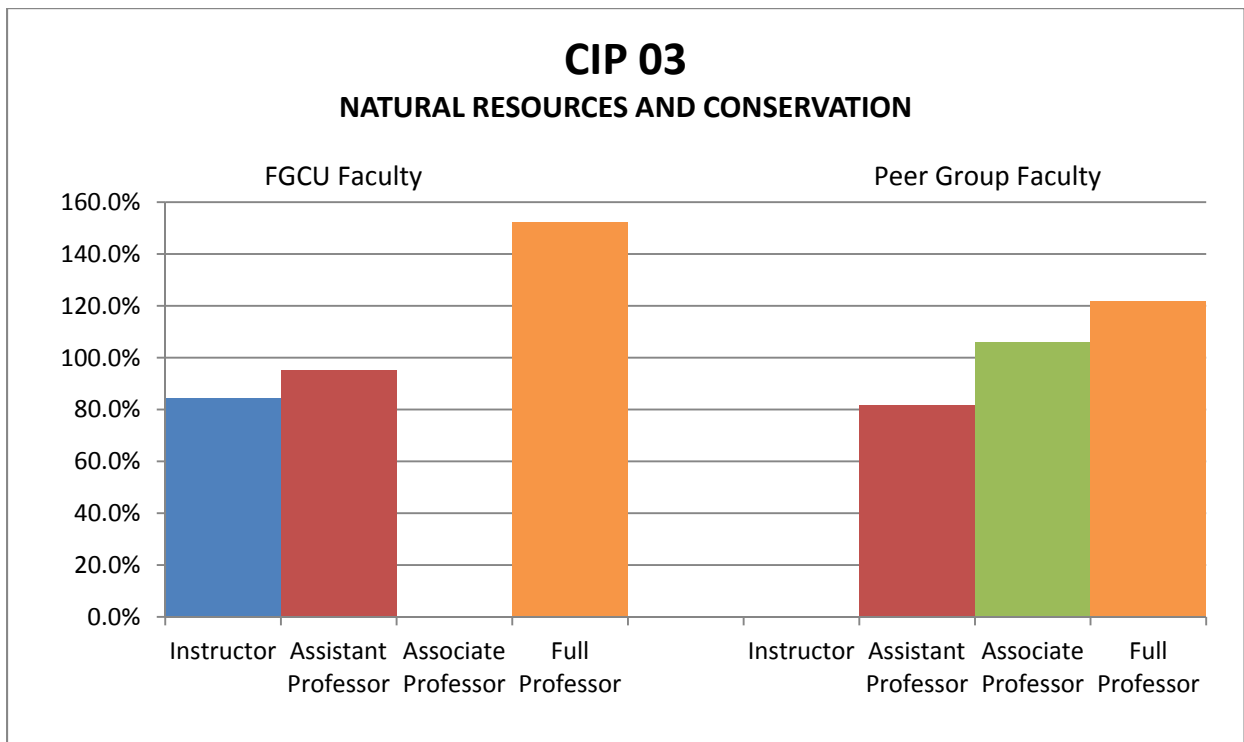
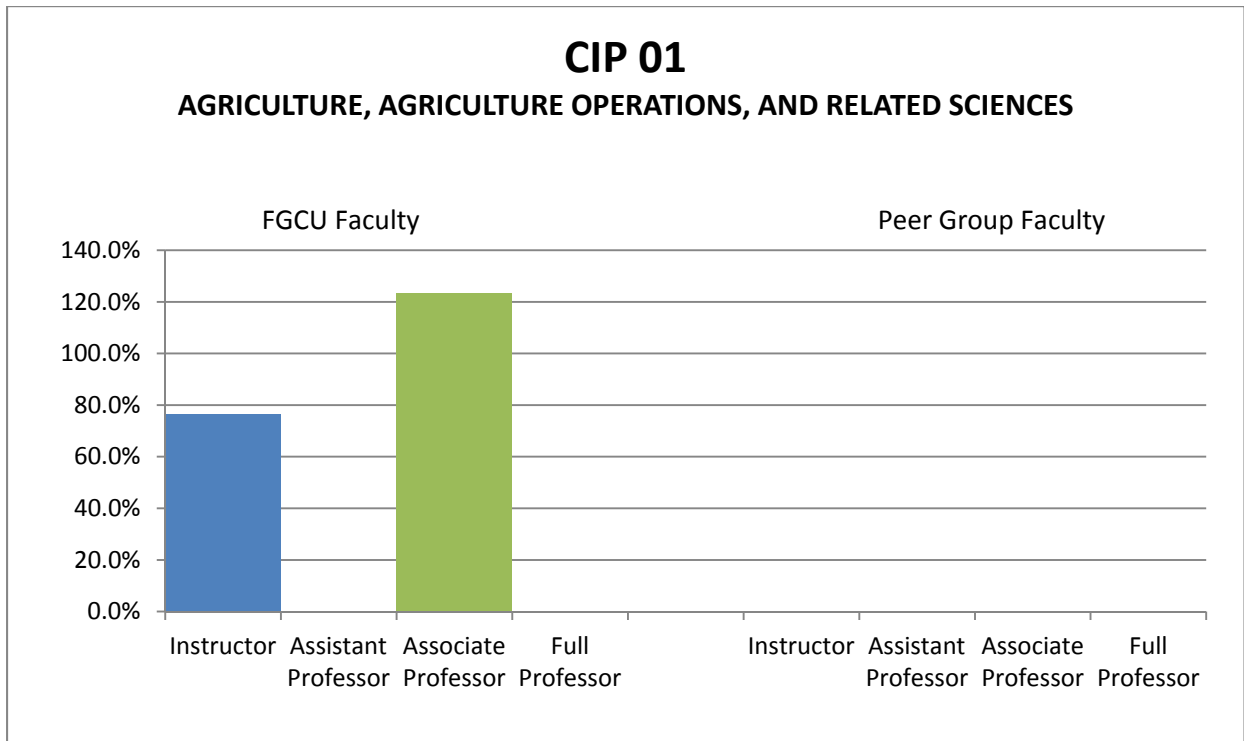
Variable	Variable Name	Coefficient	Standard Error	t-ratio	p-value
CUPA 2052	Assistant Librarian in CIP 2052	47,762	7,672	6.2253	
CUPA 2053	Assistant Librarian in CIP 2053	40,961	5,762	7.1088	
CUPA 2055	Assistant Librarian in CIP 2055	41,203	6,945	5.9328	
CUPA 2058	Assistant Librarian in CIP 2058	57,753	8,531	6.7701	
CUPA 2550	Assistant Librarian in CIP 2550	39,671	5,136	7.7242	
CUPA 5563	Assistant Librarian in CIP 5563	32,842	7,058	4.6531	
YRSAR	Years of Experience at Rank	(1,335)	911	(1.4650)	0.1770
DASSOC	Associate Librarian	10,725	4,726	2.2690	0.0494
DPROF	Librarian	24,107	7,424	3.2470	0.0100
<b>R<sup>2</sup> = 0.97</b>					
<b>Observations = 12</b>					

**Table 6. Advisor Regression Results**

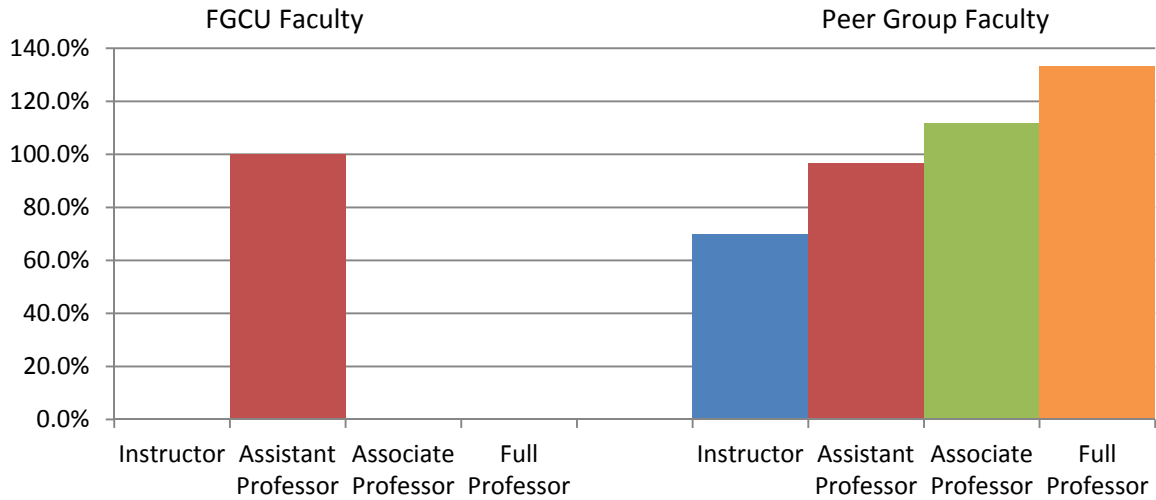
Variable	Variable Name	Coefficient	Standard Error	t-ratio	p-value
Constant	Salary	29,883	531	56.3270	0.0000
YRSAR	Years of Experience at Rank	243	204	1.1910	0.2511
DRNK2	Advisor II	4,500	539	8.3410	0.0000
<b>R<sup>2</sup> = 0.813</b>					
<b>Observations = 19</b>					

## Appendix A. Rank Ratio Comparisons between FGCU and Peer Groups by 2-Digit CIP

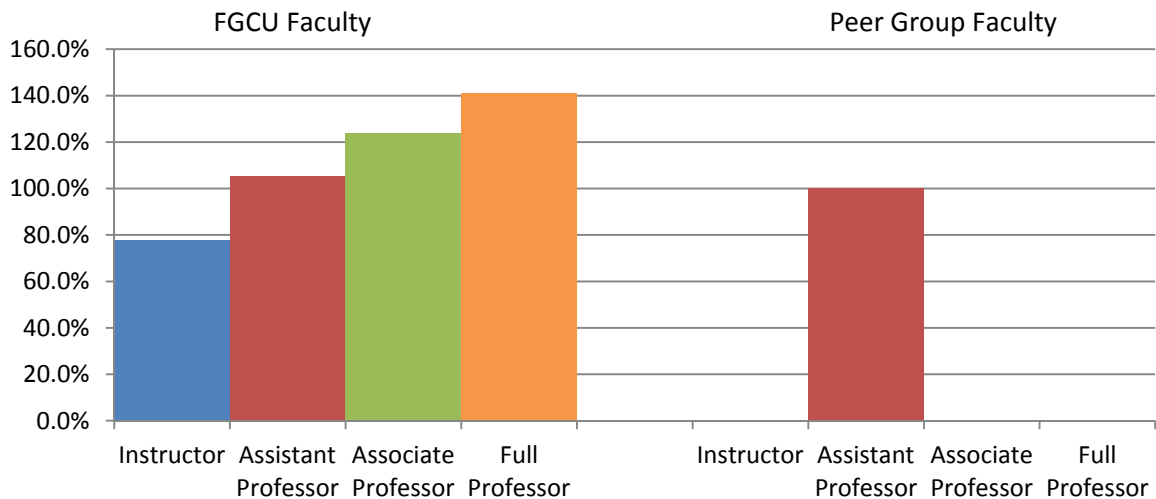
Here we present the rank ratio summary graphs for all 2-digit CIPs.



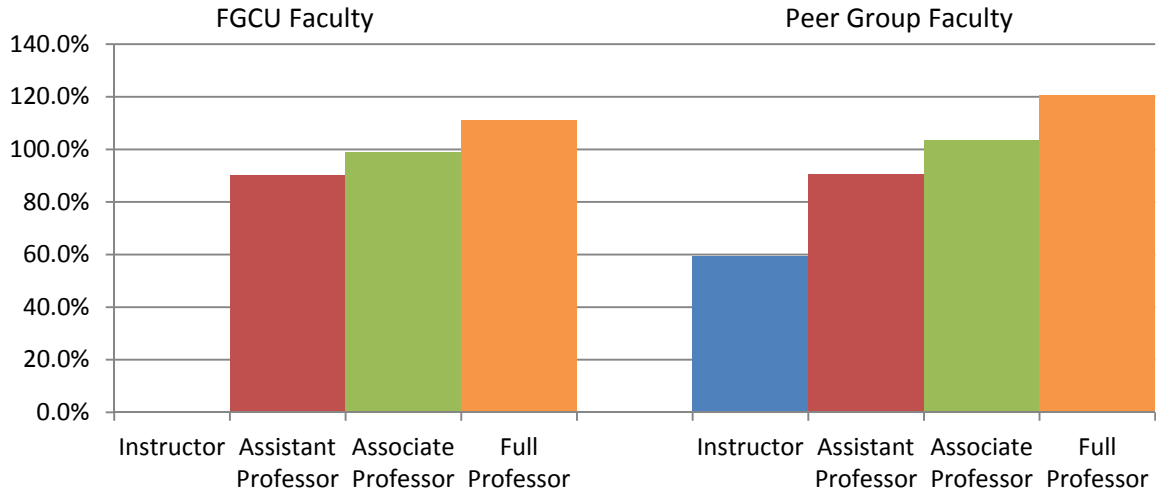
## CIP 05 AREA, ETHNIC, CULTURAL, GENDER AND GROUP STUDIES



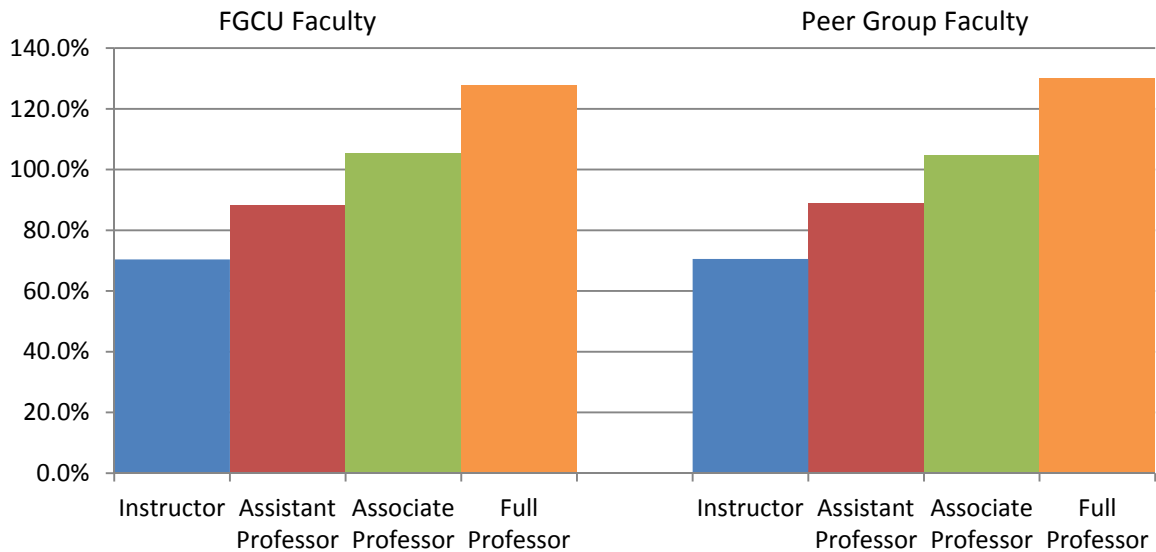
## CIP 09 COMMUNICATION, JOURNALISM AND RELATED PROGRAMS



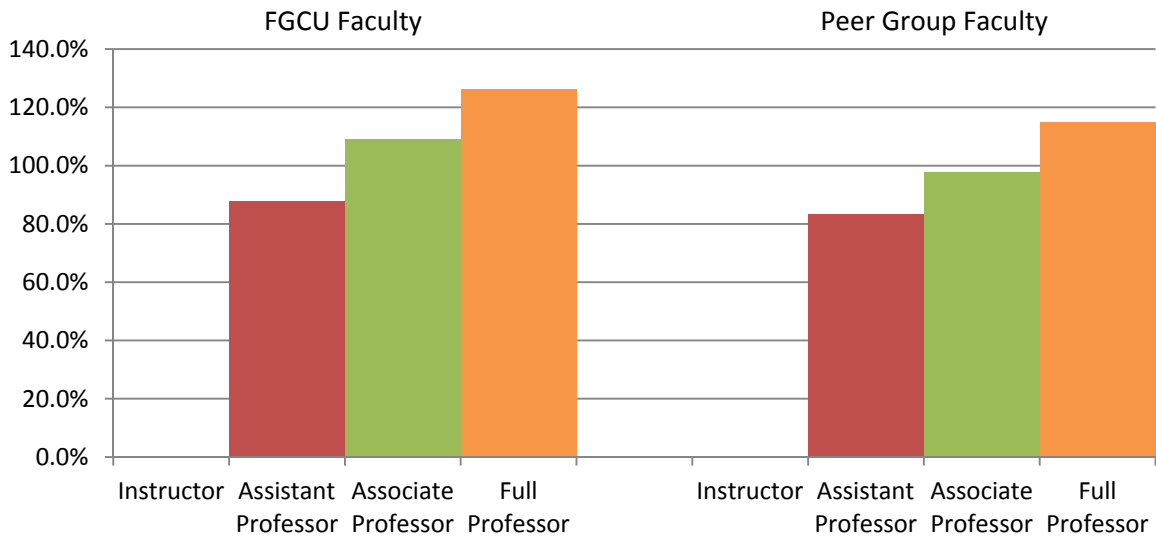
## CIP 11 COMPUTER AND INFORMATION SCIENCES AND SUPPORT SERVICES



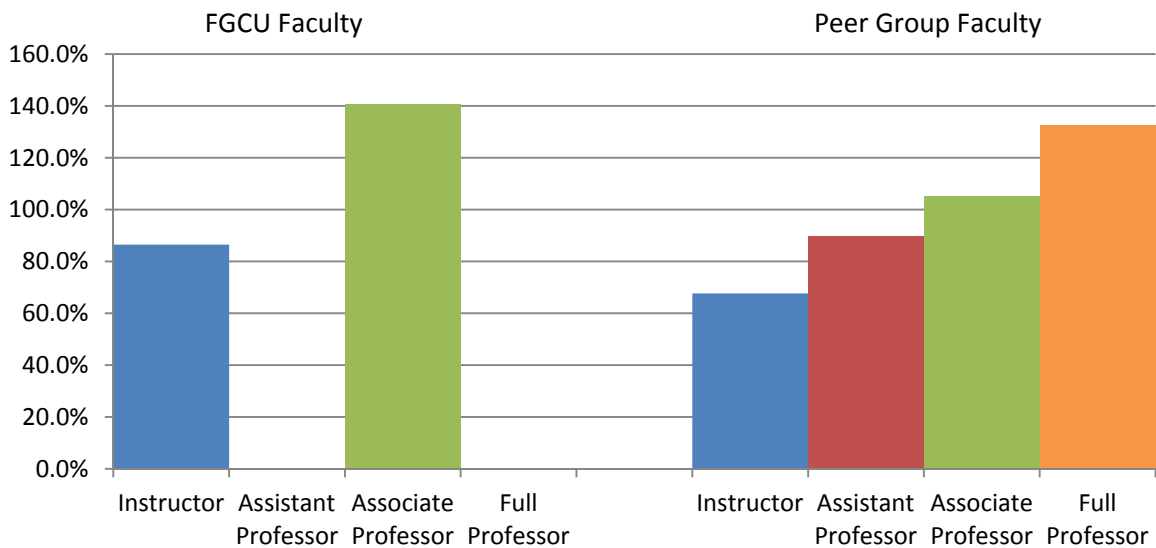
## CIP 13 EDUCATION



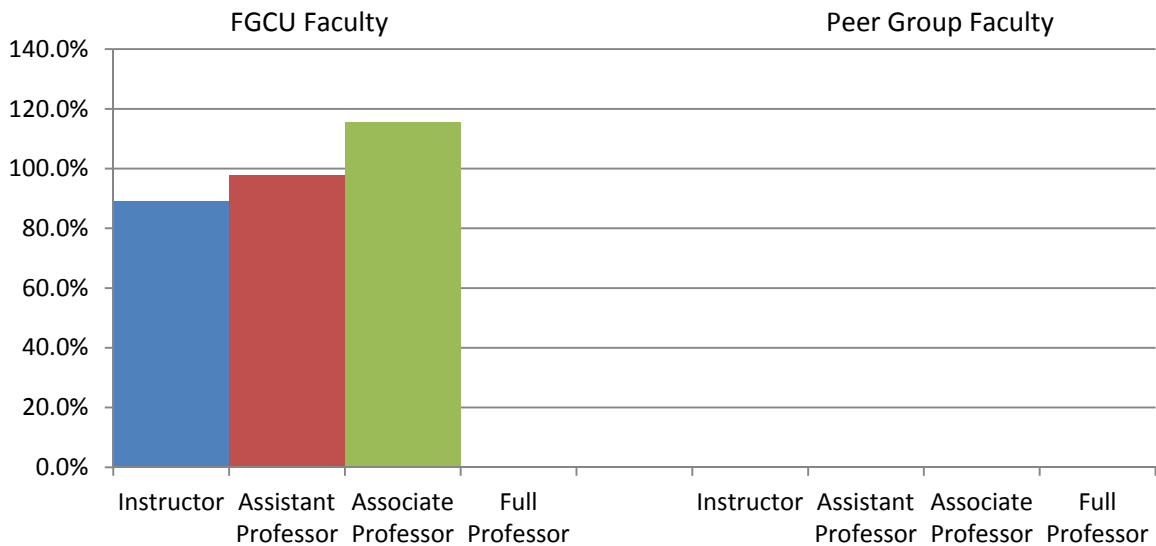
## CIP 14 ENGINEERING



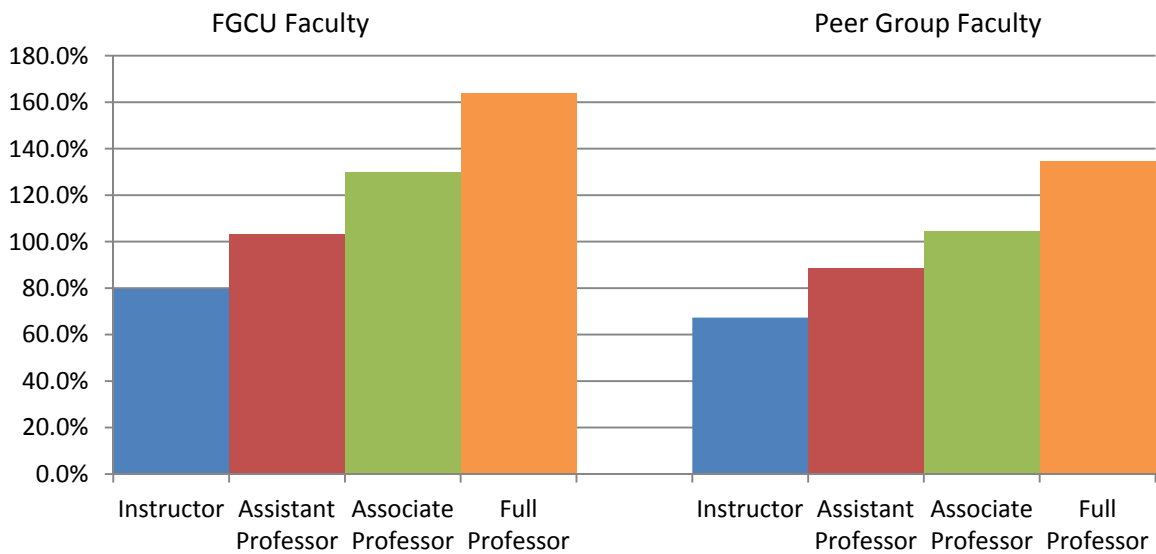
## CIP 16 FOREIGN LANGUAGES, LITERATURES, AND LINGUISTICS



## CIP 22 LEGAL PROFESSIONS AND STUDIES

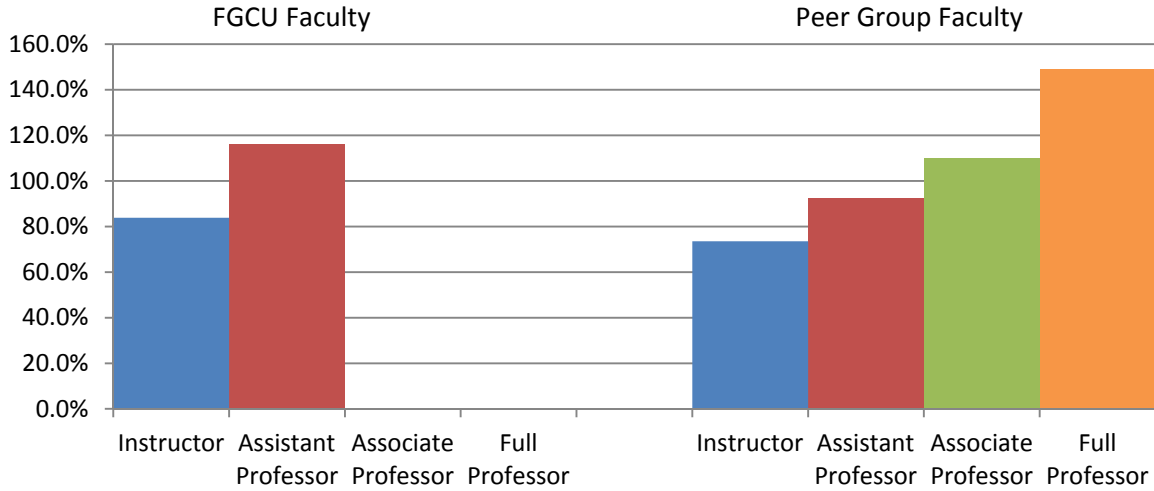


## CIP 23 ENGLISH LANGUAGE AND LITERATURE/LETTERS



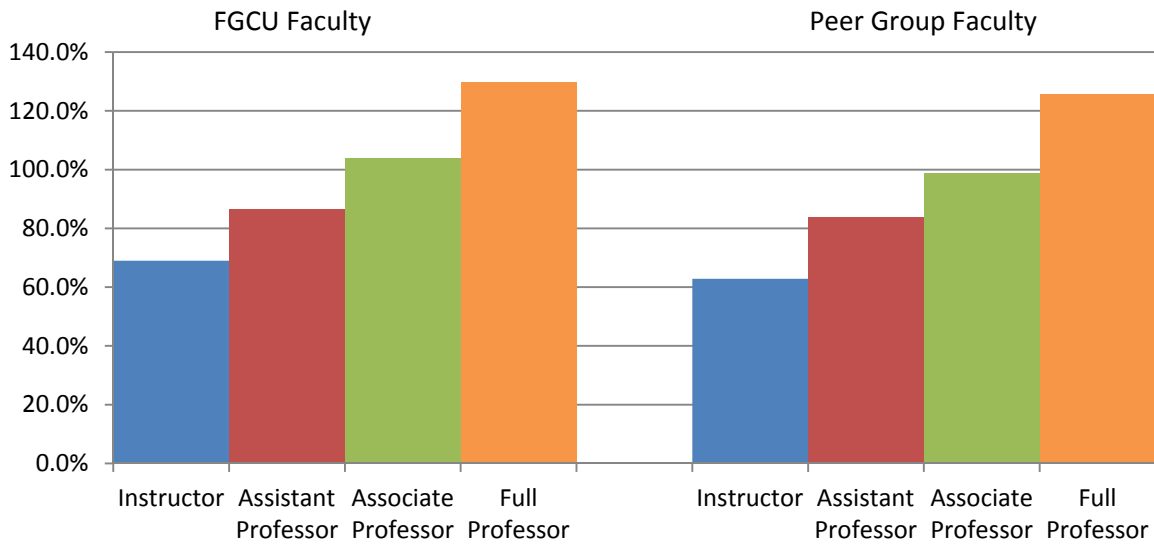
## CIP 24

### LIBERAL ARTS AND SCIENCES, GENERAL STUDIES AND HUMANITIES

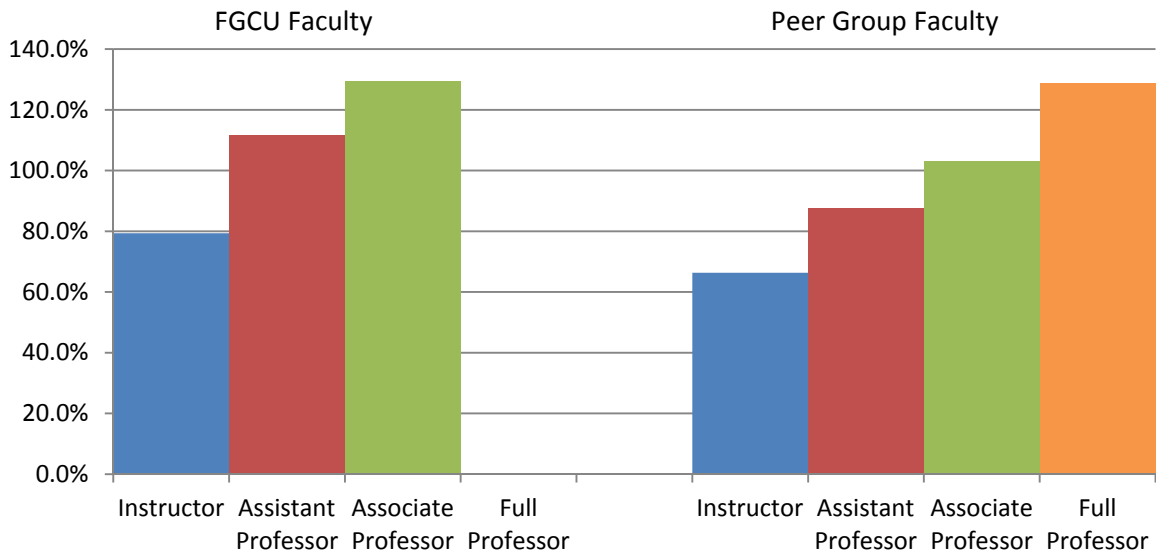


## CIP 26

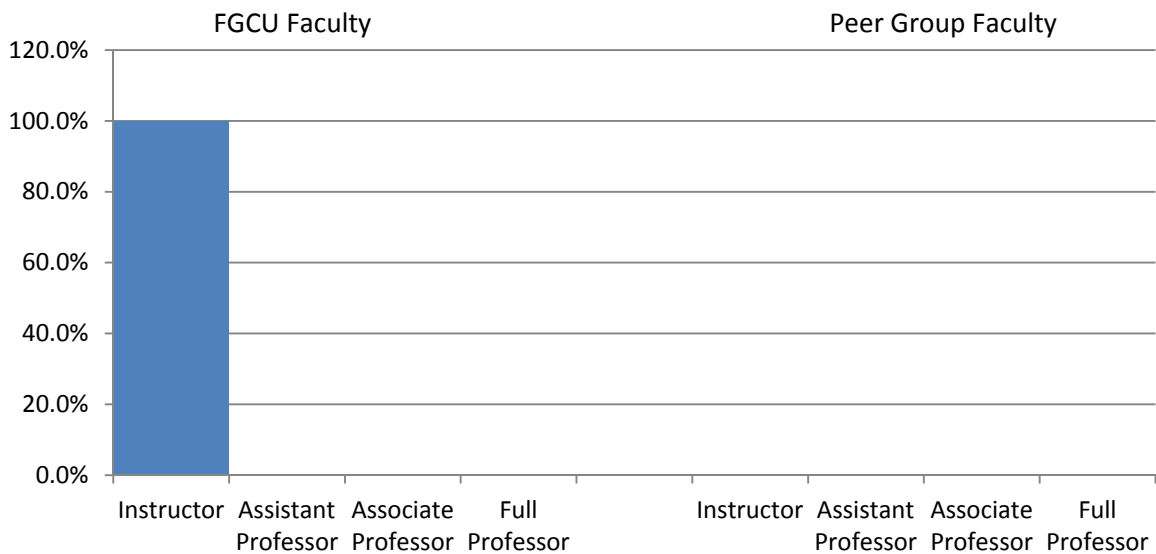
### BIOLOGICAL AND BIOMEDICAL SCIENCES



## CIP 27 MATHEMATICS AND STATISTICS

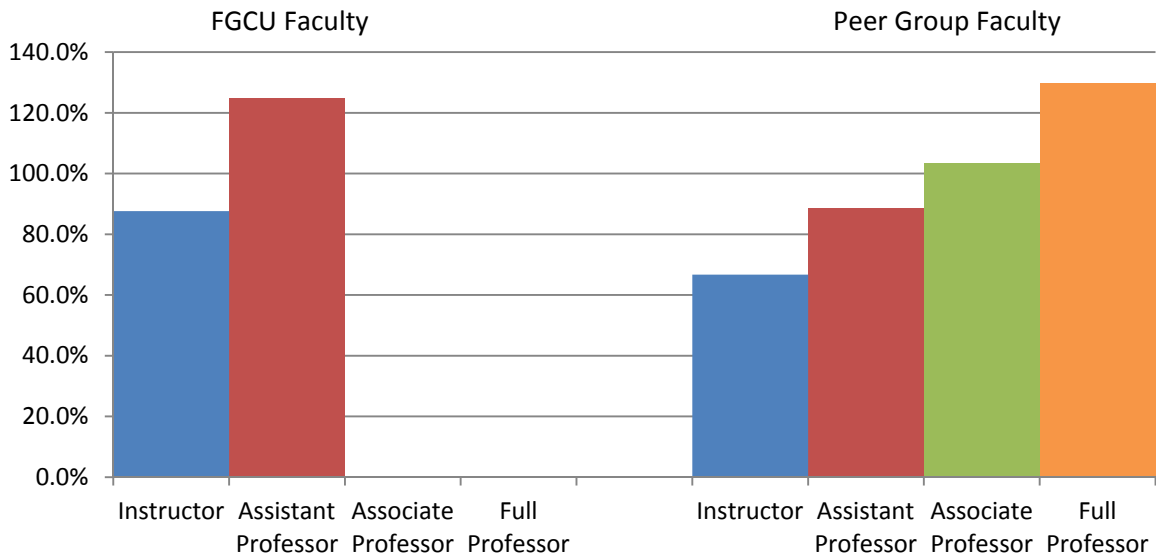


## CIP 30 MULTI/INTERDISCIPLINARY STUDIES



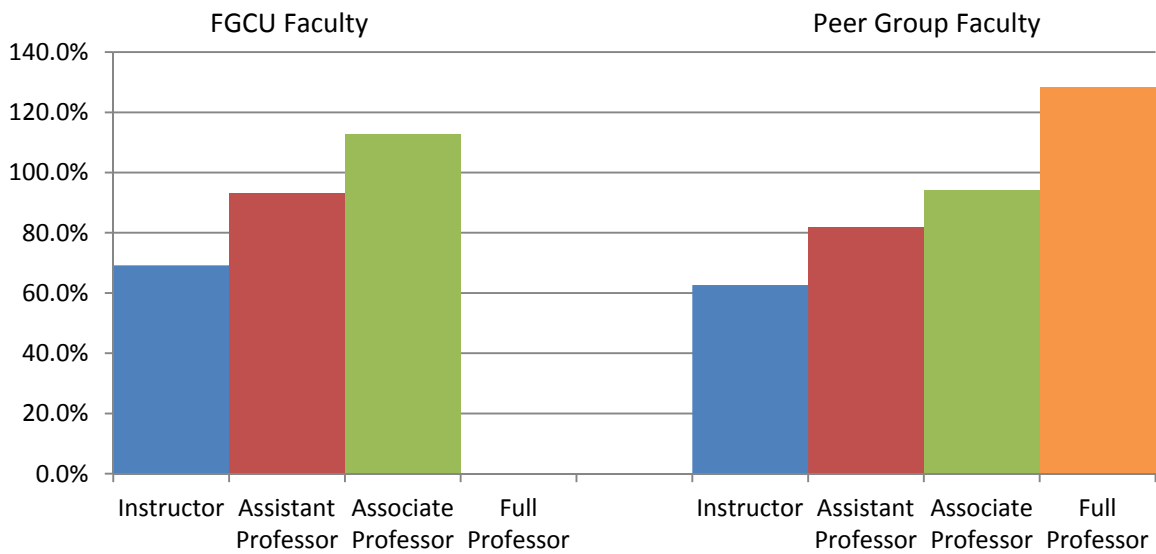
## CIP 31

### PARKS, RECREATION, LEISURE AND FITNESS STUDIES



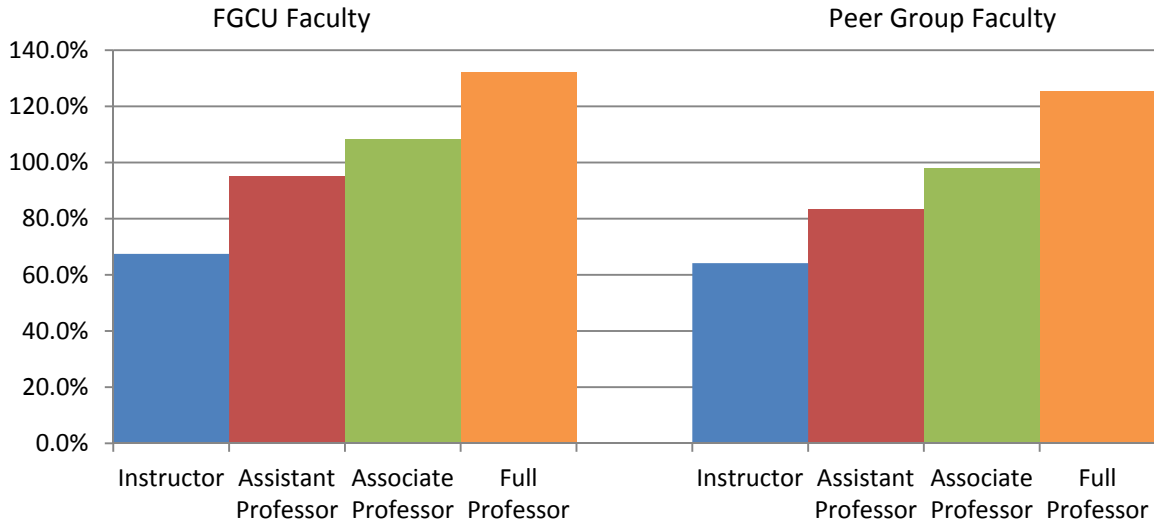
## CIP 38

### PHILOSOPHY AND RELIGIOUS STUDIES



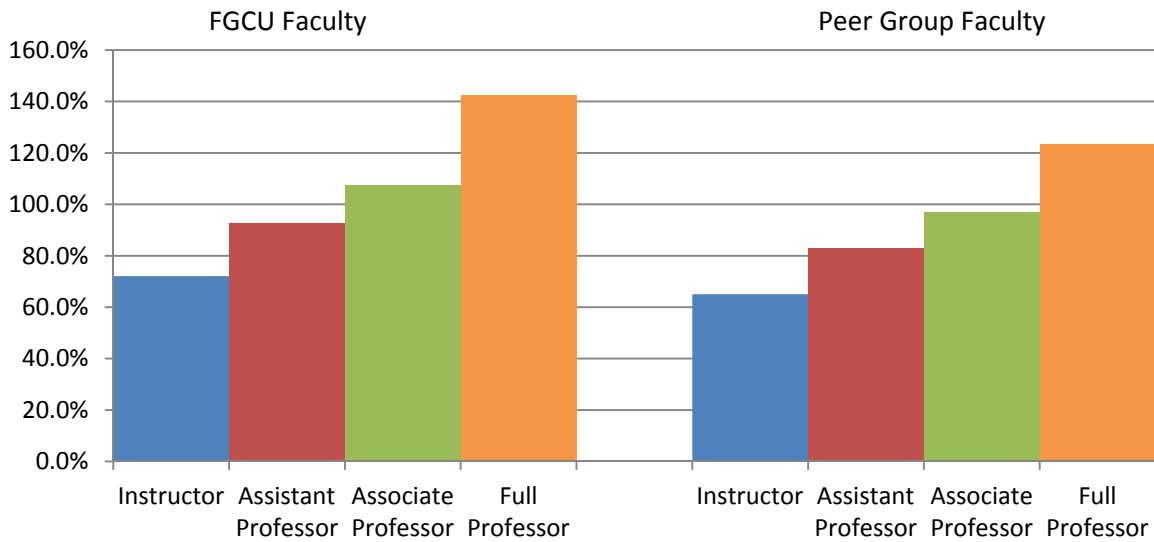
## CIP 40

### PHYSICAL SCIENCES

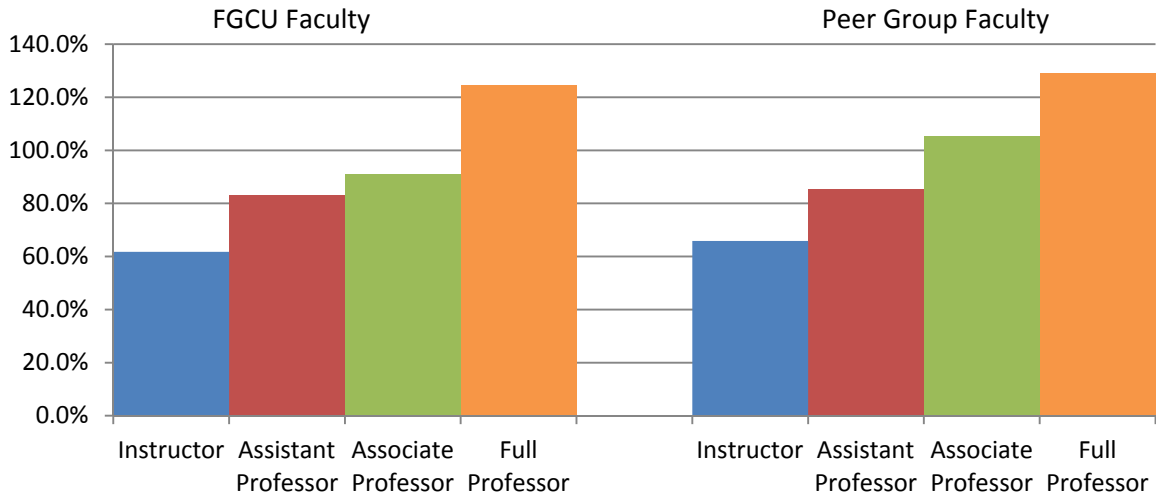


## CIP 42

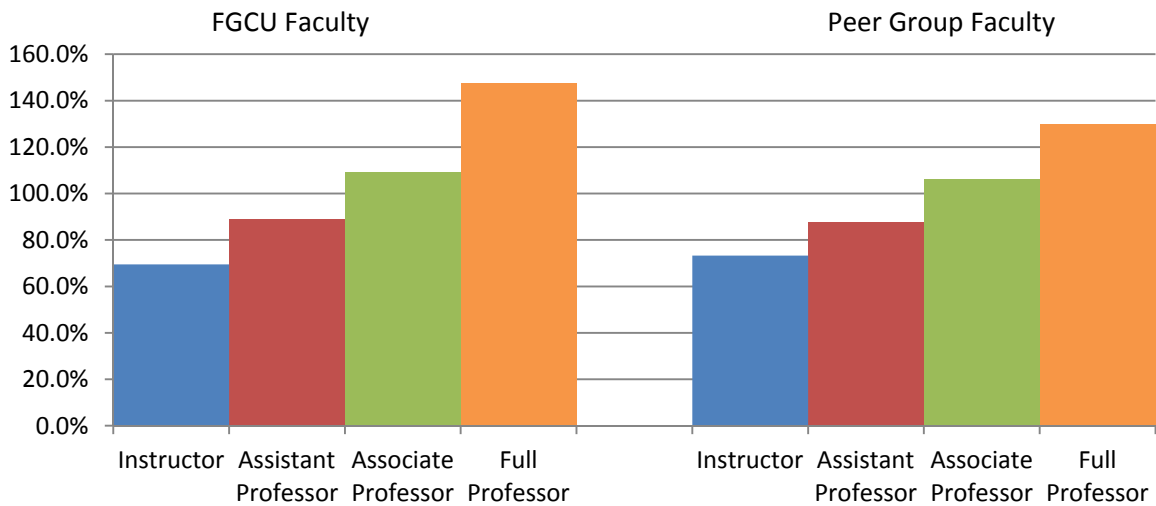
### PSYCHOLOGY



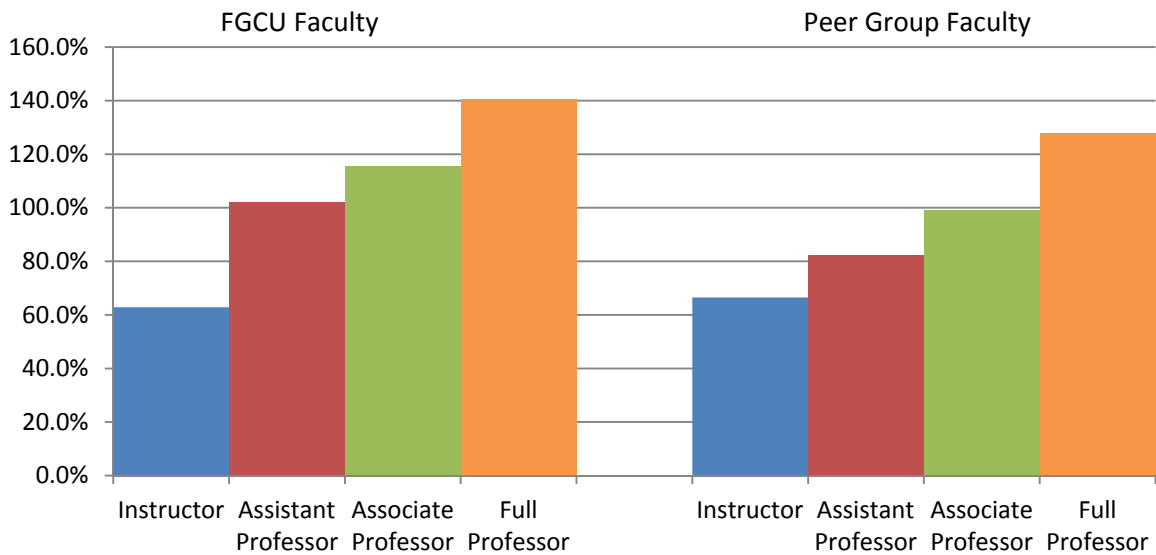
### CIP 43 HOMELAND SECURITY, LAW ENFORCEMENT, FIREFIGHTING AND RELATED PROTECTIVE SERVICE



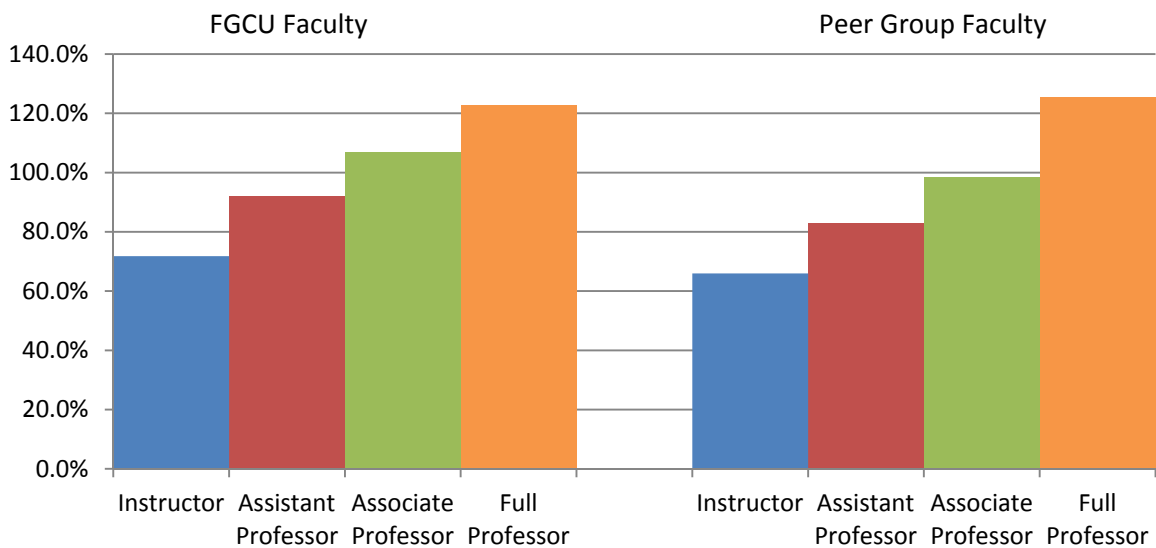
### CIP 44 PUBLIC ADMINISTRATION AND SOCIAL SERVICE PROFESSIONS



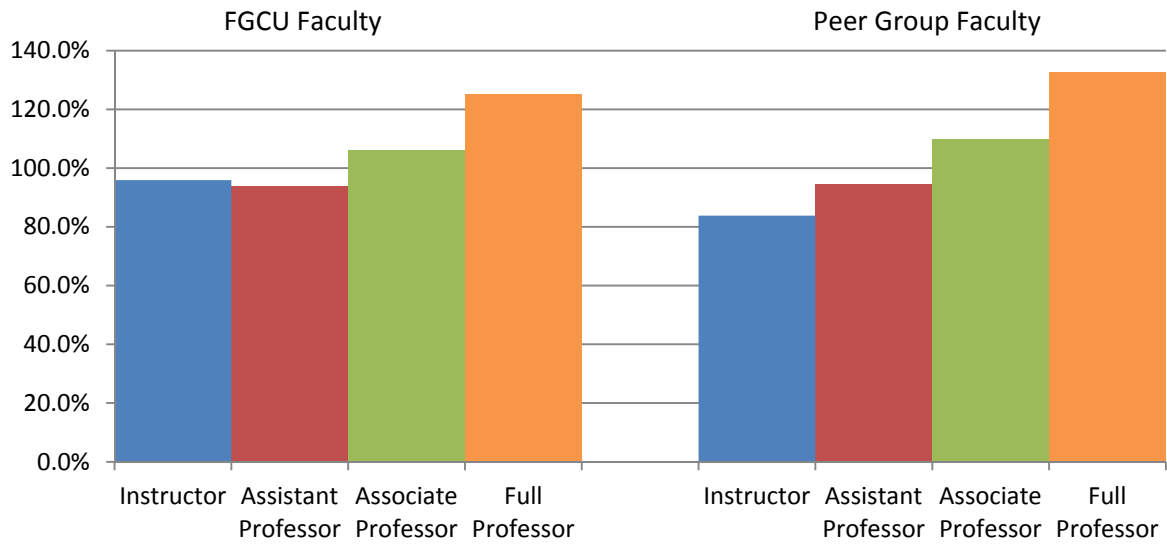
## CIP 45 SOCIAL SCIENCES



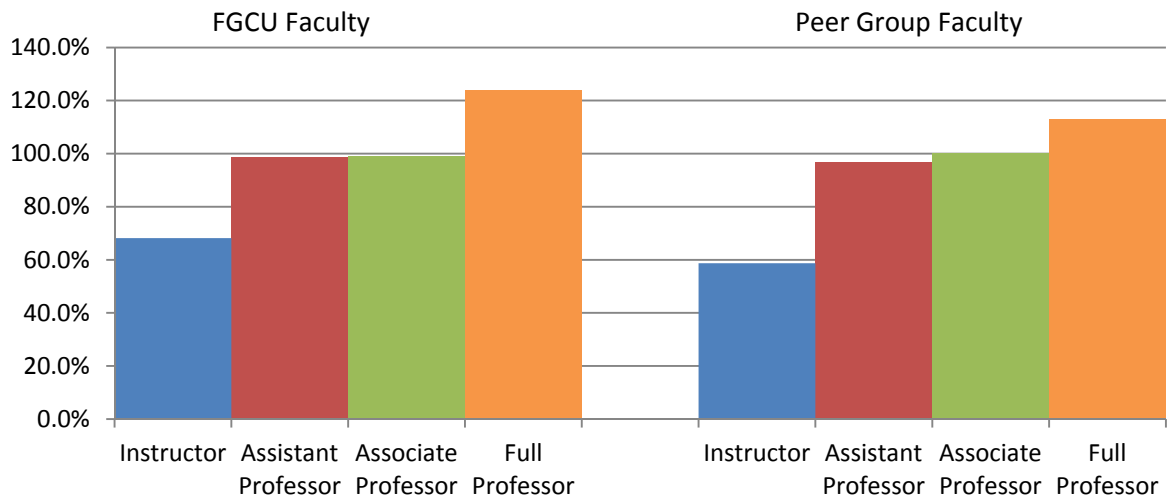
## CIP 50 VISUAL AND PERFORMING ARTS



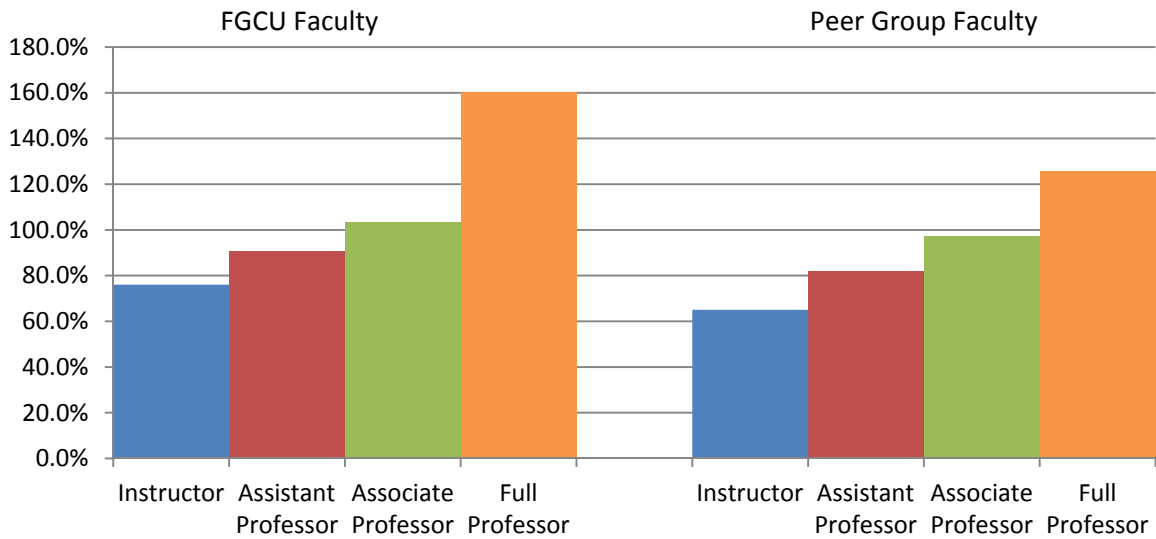
## CIP 51 HEALTH PROFESSIONS AND RELATED PROGRAMS



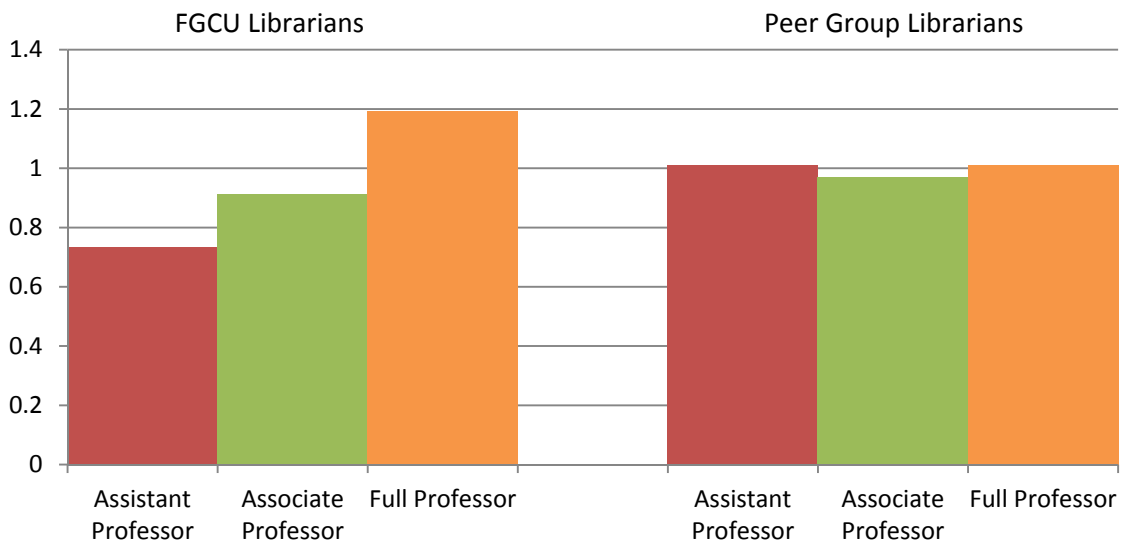
## CIP 52 BUSINESS, MANAGEMENT, MARKETING, AND RELATED SUPPORT SERVICES



## CIP 54 HISTORY GENERAL



## Librarians



## Appendix B Predicted and Actual Salary Comparisons by 2-Digit CIP

---

In this appendix we compare the regression model's predicted average salary by rank to the actual average salary for each 2-digit CIP code. A series of tables provide the coefficients derived for each CIP, as well as estimates of average salaries for each CIP by rank based on the actual averages for each variable in each CIP (i.e. average years at rank for instructors, etc.).

The tables can be used to estimate predicted salaries at the individual faculty member level; it should be noted that the model the tables represent is designed to test for salary compression and inversion, and not to predict current market factors. To estimate a predicted salary, the first step is to locate the row that coincides with rank. Jr. Assistant Professors are those Assistant professors with less than 3 years of service at that rank; Jr. Assistants should use that row for their calculation. Once the appropriate row has been identified, within the table for the faculty members 2-digit CIP, predicted salary is calculated as follows:

$$\text{Predicted Salary} = [\text{CIP Intercept}] + [\text{Rank Modifier}] + [\text{Bus. High-Salary Field Modifier (if your field is either Accounting or Finance)}] + [\text{Yrs. At Rank Modifier}] * [\text{Your Years at Rank}]$$

For example: An Assistant Professor in CIP 1 who has 5 years of experience at the rank of Assistant Professor would calculate his predicted salary as follows:

$$\text{Predicted Salary} = [39,606] + [14,177] + [-484] * [5] = \$51,363.$$

An Associate Professor of Finance in CIP 52 who has 5 years of experience at the rank of Associate Professor would calculate his predicted salary as follows:

$$\text{Predicted Salary} = [57,588] + [27,505] + [20,375] + [603] * [5] = \$108,483.$$

An Associate Professor of Economics in CIP 52 who also has 5 years of experience at the rank of Associate Professor would calculate his predicted salary as follows:

$$\text{Predicted Salary} = [57,588] + [27,505] + [603] * [5] = \$88,108$$

Estimates have a confidence interval associated with them. Statistical modeling will predict salaries that are near the average for a CIP code relatively well, and those that are further from the average less well.

One measure to provide perspective may be to use the regression standard error to calculate general confidence intervals. Statistically, for the full regression, the standard error is \$8,952. Adding or subtracting \$11,458 ( $8,952 * 1.28$ ) to the predicted salary can be used to determine outliers at the 90% level. Practically speaking, for all CIP codes, the range of "error" in the prediction of individual observations averaged about \$3,700. For purposes of manually estimating the "error" around each estimate, the standard error has been provided for each CIP, which represents the baseline CIP intercept – at instructor level with no experience. For a gauge of reasonableness, the standard error can be modified by the test statistic for the level of confidence (1.64 for a 90% confidence interval). Certain CIP codes have outliers well outside the range – for example, in CIP 3, all observations were predicted by the model to within \$2,975 of the actual salary figure, except for one observation which was underpredicted

by \$23,000. Where salaries fall outside a range predicted by the model, there may be factors unaccounted for in the model, such as years at rank prior to joining FGCU. Outliers should be considered in this context. If salaries fall within or above the predicted range, it is likely no management attention is required. If salaries fall well below the predicted range, management attention may be needed to identify whether factors outside the model justify the variation.

Statistical confidence intervals for faculty salaries were calculated for each 2 digit CIP. The 95% interval is relatively large (\$18,000 - \$55,000 for Instructors in CIP 45, for example) in order to contain all predicted salaries 95 times out of 100 repetitions of the model. This range is useful for identifying statistical relationships, but is likely too large to provide perspective. Because our analysis fits most CIPS very well, nearly all actual salaries will fall within the confidence interval. On the other hand, nearly all the outlier salaries will likely come from CIP 51 and 52 due to the wide range of salaries in those fields.

**CIP 1 AGRICULTURE, AGRICULTURE OPERATIONS, AND RELATED SCIENCES**

<b>Standard Error \$6,418 (1.64)</b>	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
<b>Instructor</b>	39,606	0	(66)	1.02	39,539	37,985	1,555	4%
<b>Assistant Professor</b>	39,606	14,177	(484)	N/A	N/A	N/A	N/A	N/A
<b>Jr. Assistant Professor*</b>	39,606	12,739	(484)	N/A	N/A	N/A	N/A	N/A
<b>Associate Professor</b>	39,606	18,935	603	1.83	59,645	61,200	(1,555)	-3%
<b>Professor</b>	39,606	30,355	1,266	N/A	N/A	N/A	N/A	N/A

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 3 NATURAL RESOURCES AND CONSERVATION**

<b>Standard Error \$3,092 (1.64)</b>	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
<b>Instructor</b>	43,603	0	(66)	2.84	43,416	45,425	(2,008)	-4%
<b>Assistant Professor</b>	43,603	14,177	(484)	3.62	56,029	52,540	3,488	7%
<b>Jr. Assistant Professor*</b>	43,603	12,739	(484)	1.78	55,479	49,980	5,499	11%
<b>Associate Professor</b>	43,603	18,935	603	N/A	N/A	N/A	N/A	N/A
<b>Professor</b>	43,603	30,355	1,266	7.53	83,482	81,950	1,532	2%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 5 AREA, ETHNIC, CULTURAL, GENDER AND GROUP STUDIES**

<b>Standard Error \$6,563 (1.64)</b>	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
<b>Instructor</b>	36,540	0	(66)	N/A	N/A	N/A	N/A	N/A
<b>Assistant Professor</b>	36,540	14,177	(484)	N/A	N/A	N/A	N/A	N/A
<b>Jr. Assistant Professor*</b>	36,540	12,739	(484)	0.98	48,803	45,000	3,803	8%
<b>Associate Professor</b>	36,540	18,935	603	N/A	N/A	N/A	N/A	N/A
<b>Professor</b>	36,540	30,355	1,266	4.02	71,988	75,791	(3,803)	-5%

\* Less than 3 years of service at the rank of Assistant Professor



**CIP 9 COMMUNICATION, JOURNALISM AND RELATED PROGRAMS**

Standard Error \$2,465 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	37,480	0	(66)	1.16	37,404	37,557	(153)	0%
Assistant Professor	37,480	14,177	(484)	5.89	48,807	49,605	(798)	-2%
Jr. Assistant Professor *	37,480	12,739	(484)	2.02	49,241	52,520	(3,279)	-6%
Associate Professor	37,480	18,935	603	7.03	60,648	59,730	918	2%
Professor	37,480	30,355	1,266	3.52	72,294	68,200	4,094	6%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 11 COMPUTER AND INFORMATION SCIENCES AND SUPPORT SERVICES**

Standard Error \$5,425 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	67,768	0	(66)	N/A	N/A	N/A	N/A	N/A
Assistant Professor	67,768	14,177	(484)	N/A	N/A	N/A	N/A	N/A
Jr. Assistant Professor *	67,768	12,739	(484)	2.02	79,529	81,600	(2,071)	-3%
Associate Professor	67,768	18,935	603	0.02	86,716	89,598	(2,881)	-3%
Professor	67,768	30,355	1,266	6.02	105,748	100,796	4,952	5%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 13 EDUCATION**

Standard Error \$2,056 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	40,444	0	(66)	2.22	40,299	42,070	(1,771)	-4%
Assistant Professor	40,444	14,177	(484)	4.02	52,675	51,988	687	1%
Jr. Assistant Professor *	40,444	12,739	(484)	1.16	52,620	53,216	(596)	-1%
Associate Professor	40,444	18,935	603	5.18	62,501	62,995	(494)	-1%
Professor	40,444	30,355	1,266	5.58	77,863	76,325	1,539	2%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 14 ENGINEERING**

Standard Error \$2,803 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	63,567	0	(66)	N/A	N/A	N/A	N/A	N/A
Assistant Professor	63,567	14,177	(484)	5.34	75,159	70,275	4,884	7%
Jr. Assistant Professor *	63,567	12,739	(484)	1.20	75,723	74,140	1,583	2%
Associate Professor	63,567	18,935	603	2.94	84,274	89,026	(4,752)	-5%
Professor	63,567	30,355	1,266	5.02	100,281	102,987	(2,706)	-3%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 16 FOREIGN LANGUAGES, LITERATURES, AND LINGUISTICS**

Standard Error \$4,538 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	36,617	0	(66)	0.69	36,572	37,553	(981)	-3%
Assistant Professor	36,617	14,177	(484)	N/A	N/A	N/A	N/A	N/A
Jr. Assistant Professor *	36,617	12,739	(484)	N/A	N/A	N/A	N/A	N/A
Associate Professor	36,617	18,935	603	14.03	64,005	61,062	2,943	5%
Professor	36,410	30,355	1,266	N/A	N/A	N/A	N/A	N/A

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 22 LEGAL PROFESSIONS AND STUDIES**

Standard Error \$4,694 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	39,959	0	(66)	2.02	39,826	45,900	(6,074)	-13%
Assistant Professor	39,959	14,177	(484)	5.02	51,705	50,404	1,301	3%
Jr. Assistant Professor *	39,959	12,739	(484)	N/A	N/A	N/A	N/A	N/A
Associate Professor	39,959	18,935	603	7.02	63,126	59,654	3,472	6%
Professor	39,959	30,355	1,266	N/A	N/A	N/A	N/A	N/A

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 23 ENGLISH LANGUAGE AND LITERATURE/LETTERS**

Standard Error \$2,035 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	35,015	0	(66)	2.67	34,840	34,818	21	0%
Assistant Professor	35,015	14,177	(484)	N/A	N/A	N/A	N/A	N/A
Jr. Assistant Professor *	35,015	12,739	(484)	1.02	47,259	45,000	2,259	5%
Associate Professor	35,015	18,935	603	3.82	56,254	56,659	(405)	-1%
Professor	35,015	30,355	1,266	3.69	70,041	70,261	(221)	0%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 24 LIBERAL ARTS AND SCIENCES, GENERAL STUDIES AND HUMANITIES**

Standard Error \$6,426 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	36,493	0	(66)	1.02	36,426	35,700	726	2%
Assistant Professor	36,493	14,177	(484)	4.02	48,723	49,450	(726)	-1%
Jr. Assistant Professor *	36,493	12,739	(484)	N/A	N/A	N/A	N/A	N/A
Associate Professor	36,493	18,935	603	N/A	N/A	N/A	N/A	N/A
Professor	36,493	30,355	1,266	N/A	N/A	N/A	N/A	N/A

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 26 BIOLOGICAL AND BIOMEDICAL SCIENCES**

Standard Error \$2,024 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	39,105	0	(66)	1.19	39,027	40,496	(1,469)	-4%
Assistant Professor	39,105	14,177	(484)	4.54	51,086	51,036	50	0%
Jr. Assistant Professor *	39,105	12,739	(484)	1.42	51,157	50,495	662	1%
Associate Professor	39,105	18,935	603	6.02	61,670	60,947	723	1%
Professor	39,105	30,355	1,266	5.35	76,231	76,301	(70)	0%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 27 MATHEMATICS AND STATISTICS**

Standard Error \$2,196 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	38,919	0	(66)	2.20	38,774	37,475	1,300	3%
Assistant Professor	38,919	14,177	(484)	5.02	50,666	52,205	(1,539)	-3%
Jr. Assistant Professor *	38,919	12,739	(484)	1.02	51,164	52,828	(1,664)	-3%
Associate Professor	38,919	18,935	603	4.42	60,519	61,099	(579)	-1%
Professor	38,919	30,355	1,266	N/A	N/A	N/A	N/A	N/A

\* Less than 3 years of service at the rank of Assistant Professor



**CIP 30 MULTI/INTERDISCIPLINARY STUDIES**

Standard Error \$6,531 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	39,871	0	(66)	3.52	39,640	39,640	0	0%
Assistant Professor	39,871	14,177	(484)	N/A	N/A	N/A	N/A	N/A
Jr. Assistant Professor *	39,871	12,739	(484)	N/A	N/A	N/A	N/A	N/A
Associate Professor	39,871	18,935	603	N/A	N/A	N/A	N/A	N/A
Professor	39,871	30,355	1,266	N/A	N/A	N/A	N/A	N/A

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 31 PARKS, RECREATION, LEISURE AND FITNESS STUDIES**

Standard Error \$5,407 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	48,838	0	(66)	3.52	48,607	45,527	3,080	7%
Assistant Professor	48,838	14,177	(484)	9.03	58,647	64,807	(6,160)	-10%
Jr. Assistant Professor *	48,838	12,739	(484)	N/A	N/A	N/A	N/A	N/A
Associate Professor	48,838	18,935	603	N/A	N/A	N/A	N/A	N/A
Professor	48,838	30,355	1,266	N/A	N/A	N/A	N/A	N/A

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 38 PHILOSOPHY AND RELIGIOUS STUDIES**

Standard Error \$4,338 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	39,230	0	(66)	6.02	38,835	37,885	950	3%
Assistant Professor	39,230	14,177	(484)	N/A	N/A	N/A	N/A	N/A
Jr. Assistant Professor *	39,230	12,739	(484)	1.02	51,475	51,000	475	1%
Associate Professor	39,230	18,935	603	5.02	61,193	61,667	(475)	-1%
Professor	39,230	30,355	1,266	N/A	N/A	N/A	N/A	N/A

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 40 PHYSICAL SCIENCES**

Standard Error \$2,279 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	38,403	0	(66)	0.77	38,352	36,875	1,477	4%
Assistant Professor	38,403	14,177	(484)	3.77	50,754	51,681	(927)	-2%
Jr. Assistant Professor *	38,403	12,739	(484)	0.52	50,889	52,175	(1,286)	-2%
Associate Professor	38,403	18,935	603	2.58	58,891	59,079	(188)	0%
Professor	38,403	30,355	1,266	4.02	73,850	72,306	1,544	2%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 42 PSYCHOLOGY**

Standard Error \$2,917 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	39,690	0	(66)	0.02	39,689	40,000	(311)	-1%
Assistant Professor	39,690	14,177	(484)	7.69	50,145	51,519	(1,374)	-3%
Jr. Assistant Professor *	39,690	12,739	(484)	0.69	52,096	51,340	756	1%
Associate Professor	39,690	18,935	603	3.02	60,447	59,633	813	1%
Professor	39,690	30,355	1,266	7.53	79,570	79,146	424	1%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 43 HOMELAND SECURITY, LAW ENFORCEMENT, FIREFIGHTING AND RELATED PROTECTIVE SERVICE**

Standard Error \$3,201 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	41,747	0	(66)	1.02	41,679	40,900	779	2%
Assistant Professor	41,747	14,177	(484)	4.52	53,734	55,090	(1,356)	-2%
Jr. Assistant Professor *	41,747	12,739	(484)	N/A	N/A	N/A	N/A	N/A
Associate Professor	41,747	18,935	603	5.36	63,909	60,361	3,549	6%
Professor	41,747	30,355	1,266	6.47	80,285	82,464	(2,179)	-3%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 44 PUBLIC ADMINISTRATION AND SOCIAL SERVICE PROFESSIONS**

Standard Error \$2,668 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	41,747	0	(66)	1.52	41,648	41,104	544	1%
Assistant Professor	41,747	14,177	(484)	4.27	53,856	54,472	(615)	-1%
Jr. Assistant Professor *	41,747	12,739	(484)	1.34	53,838	50,996	2,842	6%
Associate Professor	41,747	18,935	603	9.53	66,422	64,584	1,838	3%
Professor	41,747	30,355	1,266	7.69	81,839	87,343	(5,505)	-6%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 45 SOCIAL SCIENCES**

Standard Error \$2,865 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	36,732	0	(66)	0.67	36,688	32,000	4,688	15%
Assistant Professor	36,732	14,177	(484)	4.02	48,962	52,025	(3,063)	-6%
Jr. Assistant Professor *	36,732	12,739	(484)	1.02	48,977	52,000	(3,023)	-6%
Associate Professor	36,732	18,935	603	5.77	59,146	58,806	340	1%
Professor	36,732	30,355	1,266	1.02	68,381	71,671	(3,290)	-5%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 50 VISUAL AND PERFORMING ARTS**

Standard Error \$2,435 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	36,871	0	(66)	0.02	36,870	39,000	(2,130)	-5%
Assistant Professor	36,871	14,177	(484)	4.36	48,940	49,339	(399)	-1%
Jr. Assistant Professor *	36,871	12,739	(484)	1.02	49,116	50,045	(929)	-2%
Associate Professor	36,871	18,935	603	4.31	58,402	57,932	470	1%
Professor	36,871	30,355	1,266	2.02	69,785	66,669	3,116	5%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 51 HEALTH PROFESSIONS AND RELATED PROGRAMS**

Standard Error \$2,336 (1.64)	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
Instructor	64,027	0	(66)	2.19	63,884	63,884	(0)	0%
Assistant Professor	64,027	4,277	(484)	9.81	63,555	63,555	(0)	0%
Jr. Assistant Professor *	64,027	(3,258)	(484)	0.94	60,315	60,315	(0)	0%
Associate Professor	64,027	3,463	603	5.38	70,729	70,729	(0)	0%
Professor	64,027	7,236	1,266	9.52	83,312	83,312	0	0%

\* Less than 3 years of service at the rank of Assistant Professor



**CIP 52 BUSINESS, MANAGEMENT, MARKETING, AND RELATED SUPPORT SERVICES**

<b>Standard Error \$3,101 (1.64)</b>	CIP Intercept	Rank Modifier	Bus. High-Salary Field Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Percentage Bus. High-Salary Field Faculty	Predicted Salary	Actual Salary	Difference	Percent Difference
<b>Instructor</b>	57,588	0	20,375	(66)	2.08	0.30	63,564	63,564	(0)	0%
<b>Assistant Professor</b>	57,588	26,363	20,375	(484)	5.02	0.00	81,520	80,812	708	1%
<b>Jr. Assistant Professor *</b>	57,588	32,268	20,375	(484)	0.77	0.36	96,891	96,891	(0)	0%
<b>Associate Professor</b>	57,588	27,505	20,375	603	5.51	0.19	92,293	92,293	0	0%
<b>Professor</b>	57,588	46,724	20,375	1,266	4.54	0.27	115,494	115,494	(0)	0%

\* Less than 3 years of service at the rank of Assistant Professor

**CIP 54 HISTORY GENERAL**

<b>Standard Error \$3,177 (1.64)</b>	CIP Intercept	Rank Modifier	Yrs. at Rank Modifier	Avg. Yrs. at Rank	Predicted Salary	Actual Salary	Difference	Percent Difference
<b>Instructor</b>	37,607	0	(66)	0.02	37,605	41,000	(3,395)	-8%
<b>Assistant Professor</b>	37,607	14,177	(484)	6.03	48,868	50,951	(2,083)	-4%
<b>Jr. Assistant Professor *</b>	37,607	12,739	(484)	0.69	50,013	47,500	2,513	5%
<b>Associate Professor</b>	37,607	18,935	603	2.02	57,760	55,825	1,935	3%
<b>Professor</b>	37,607	30,355	1,266	10.03	80,652	86,434	(5,782)	-7%

\* Less than 3 years of service at the rank of Assistant Professor

## Works Consulted

---

Snyder, J. K., McLaughlin, G. W., & Montgomery, J. R. (1992). Diagnosing and dealing with salary compression. *Research in Higher Education*, 33(1), 113-124.

Toutkoushian, R. K. (1998). Using regression analysis to determine if faculty salaries are overly compressed. *Research in Higher Education*, 39(1), 87-100.

Twigg, N. W., Valentine, S. R., & Elias, R. Z. (2002). A comparison of salary compression models and pay allocation in academia over time. *The Review of Higher Education*, 26(1), 81-96.

Western Michigan Salary Compression Report. (1999). Retrieved on December 14, 2010 from: [www.wmich.edu/acb/SalaryCompReport.pdf](http://www.wmich.edu/acb/SalaryCompReport.pdf)