This study examined salary data for 8,270 college faculty in the field of chemistry for both public and private institutions for the years 1995-1996 and 1998-1999. The study reflects data obtained from the 279 public and 386 private institutions that participated in both study years. The study found that the average faculty salary in chemistry for public institutions was 6.2 percent higher than the average salary for faculty in all major fields in 1995-1996 and 5.1 percent higher than the average salary for faculty in all major fields in 1998-1999. It also found that the average faculty salary in the field for private institutions was 2.5 percent higher than the average salary for faculty in all major fields in 1995-1996 and 1.4 percent lower than the average salary for faculty in all major fields in 1998-1999. For the study period, chemistry faculty in public and private institutions received average annual salary increases of 0.7 percent and 0.5 percent, respectively, above the cost of living (as reflected by the Consumer Price Index). Three appendixes provide a list of disciplines and participating institutions. (MDM)

Foreword

by

Richard D. Howe
Appalachian State University
Boone, NC 28608

Since 1982-83 the College and University Personnel Association (CUPA) in Washington, DC, in cooperation with Appalachian State University in Boone, NC, have conducted annual national faculty salary surveys by discipline and rank each year through 1998-99. Two separate surveys are conducted each year, one for public senior colleges and universities and the other for private senior colleges and universities.

Salary data from the 1995-96 and 1998-99 surveys were collected and tabulated for full-time teaching faculty in 53 selected academic disciplines/major fields chosen from among those defined by A Classification of Instructional Programs, 1990.

Each of the 53 academic disciplines/major fields presents a summary of the overall average salary increase in that academic discipline/major field from the “baseline year” of 1995-96 to and including the “trend year” of 1998-99 for both public and private participating institutions. Of the 329 public institutions which participated in CUPA’s public survey of 1995-96, 279 also participated in the 1998-99 survey. Data from those same 279 institutions were used in both the baseline year and the trend year studies. Of the 530 institutions which participated in CUPA’s private survey of 1995-96, 386 also participated in the 1998-99 survey. Data from those same 386 institutions were used in both the baseline year and the trend year.

In addition to listing the average salaries in Chemistry for both public and private participating institutions by rank, including “new assistant professor,” and listing the faculty mix percentage (FAC MIX PCT) and the salary factor, comparisons are made between the two public surveys and the two private surveys for each of the two study years (1995-96 and 1998-99) and with the CPI (Consumer Price index) of changes in cost-of-living.

The list of all 53 selected academic disciplines/major fields surveyed, including Chemistry, is found in appendix A, and the lists of all participating senior colleges and universities are found in appendixes B (public) and C (private) of this article.
SALARY-TREND STUDY OF FACULTY IN CHEMISTRY

by
Richard D. Howe

Since 1982-83 the College and University Personnel Association (CUPA) in Washington, D.C., in cooperation with Appalachian State University in Boone, North Carolina, has conducted two annual national faculty salary studies by discipline and rank through 1998-99: one for public senior colleges and universities, and the other for private senior colleges and universities.

Salary data for each study were collected and tabulated for full-time teaching faculty in 53 selected academic disciplines/major fields chosen from among those defined by A Classification of Instructional Programs *(CIP), 1990, including Chemistry. The CIP defines the discipline/major field of Chemistry as,

A group of instructional programs that generally describes the scientific study of the composition and behavior of matter, including its micro- and macro-structure, the processes of chemical change, and the theoretical description and laboratory simulation of these phenomena.*


This article summarizes the overall average salary increases in the discipline/major field of Chemistry for both public and private institutions from the “baseline year” of 1995-96 to and including the “trend year” of 1998-99. Of the 329 institutions which participated in CUPA’s PUBLIC study of 1995-96, 279 also participated in 1998-99. Data from those same 279 institutions were used in both the baseline year and the trend year. Of the 530 institutions which participated in CUPA’s PRIVATE study of 1995-96, 386 also participated in 1998-99. Data from those same 386
institutions were used in both the baseline year and the trend year.

This article lists the average salaries for the discipline/major field of Chemistry for both public and private participating institutions by rank, including NEW ASST PROF (new assistant professor), the FAC MIX PCT (faculty mix percentage), and the SALARY FACTOR. Comparisons are also made using the CPI's (Consumer Price Index) changes in cost-of-living between the two studies for each of the two study years (1995-96 and 1998-99).

The CPI uses a base period of 1982-84 and measures/tabulates prices of food, clothing, shelter and fuels, transportation, medical care, entertainment and other goods and services people buy for day-to-day living. When examining trends in faculty salary, it is important to consider any changes in the purchasing power of salaries due to inflation. Comparing changes in the faculty salaries with the CPI gives one a more precise view of what “real” salary increases are, that is, buying power.

The salary is based on a nine- or 10-month academic year salary of full-time faculty, and does not include any faculty teaching less than 51 percent. Salary for summer academic work, fringe benefits, and perquisites are also not included in the salary data. The average salary is based on the study information with the assumption that all employees are full-time. The average salary displayed is an average of all faculty salaries reported for a given rank and discipline.

“NUM” refers to the number of faculty members whose salaries were included to compute the average salary.

“N/IN” refers to the number of institutions that reported salary data for a given academic rank and discipline/major field.

The FAC MIX PCT represents the percentage of faculty in a given discipline/major field who hold a given academic rank. For example, a FAC MIX PCT factor of 24.5 for associate professors
of Chemistry in the 1995-96 public study means that 24.5 percent of the faculty in that discipline/major field held the rank of associate professor.

The SALARY FACTOR for a given rank in a given discipline/major field represents the ratio of the average salary to the total average salary of all institutions in each of the four studies: PUBLIC 1995-96, PUBLIC 1998-99, PRIVATE 1995-96 and PRIVATE 1998-99. For example, a SALARY FACTOR of .96 for associate professors in the discipline/major field of Chemistry in the 1995-96 public study means that their average salary is four percent lower than the average salary for all associate professors in all institutions in that study.

NEW ASST PROF refers to the grouping of assistant professors hired for the first time in the fall of the study year (1995-96 or 1998-99). All information for this group was included in the ASST PROF group for reporting purposes.

ALL MAJOR FIELDS refers to the entire data base for all 53 disciplines/major fields in each of the four studies. Among other things, it is used to compare the discipline/major field of Chemistry with the entire data base for each study.

The reader will find the size of the sample on which each percentage or dollar value is based to be of particular importance. The smaller the number in the group, the greater the effect of extreme scores on a descriptive statistic such as the average. It should also be noted that any large disparity in the sample sizes between the "baseline year" of 1995-96 and the "trend year" of 1998-99 will lessen the reliability and validity of any conclusions that one might make based on a simple comparison of averages.
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In the PUBLIC 1995-96 study in the above table, the discipline/major field of Chemistry was reported in 243 of the 279 public institutions. The average salary of the 2,530 faculty was $51,548. This average salary was approximately 6.2 percent higher than the average salary of $48,543 for all 90,660 faculty in ALL MAJOR FIELDS in the same 1995-96 public study.

For the PUBLIC 1998-99 salary study in the above table, Chemistry was reported in 250 of the same 279 public institutions. The average salary of the 2,713 faculty was $56,082. This average salary was approximately 5.1 percent higher than the average salary of $53,370 for all 89,174 faculty in ALL MAJOR FIELDS in the 1998-99 public study.

The three-year increase in average salaries for all faculty in the discipline/major field of Chemistry in the public institutions studied was 8.8 percent ($56,082 minus $51,548 equals $4,534). The CPI of increase cost-of-living between October 1995 and October 1998 was 6.7 percent. In comparison, with the CPI, there was a relative increase in Chemistry average faculty salaries over the three-year period by 2.1 percent or an average of .7 percent each year above the cost-of-living.

The increase in average salaries for all faculty in ALL MAJOR FIELDS over three years in the public institutions studied was 9.9 percent ($53,370 minus $48,543 equals $4,827). In comparison to the discipline/major field of Chemistry (8.8%), the faculty in ALL MAJOR FIELDS received a relative increase in their salaries of 1.1 percent more than the faculty in the discipline/major field of Chemistry.

In the 1995-96 and 1998-99 studies the faculty mix percentage in Chemistry are higher at the professor rank than at the assistant professor rank: 48.3 percent vs. 24.2 percent; in the 1998-99 study it is 43.9 percent vs. 26.7 percent. The differences in faculty mix percentage at the ranks of professor and assistant professors in ALL MAJOR FIELDS for both public studies are 35.4 percent
vs. 28.1 percent (1995-96) and 34.9 percent vs. 27.9 percent (1998-99).

Finally, the hiring rate of new assistant professors in Chemistry in the public studies was higher than the hiring rate of ALL MAJOR FIELDS in 1995-96, 5.2 percent (132/2,530) vs 4.6 percent (4,205/90,660) and higher in 1998-99, 5.0 percent (135/2,713) vs. 4.9 percent (4,386/89,174).


The PRIVATE 1995-96 salary study in the above table indicates that the discipline/major field of Chemistry was reported in 325 of the 386 private institutions. The average salary of the 1,503 faculty was $49,477, an average salary 2.5 percent higher than the average salary of $48,264 for all 43,114 faculty in ALL MAJOR FIELDS in the 1995-96 private study.

In the PRIVATE 1998-99 salary study in the above table, 326 of the same 386 private institutions reported Chemistry. The average salary of the 1,524 faculty was $53,580, an average salary 1.4 percent lower than the average salary of $54,316 for all 44,803 faculty in ALL MAJOR FIELDS in the 1998-99 private study.

The three-year increase in average salaries for all faculty in Chemistry in the private institutions studied was 8.3 percent ($53,580 minus $49,477 equals $4,103). The CPI increased cost-of-living between October 1995 and October 1998 was 6.7 percent. A more realistic increase, therefore, in the average faculty salaries of Chemistry over the three-year time period, is 1.6 percent or .5 percent each year above the cost-of-living.

The three-year increase in average salaries for all faculty in ALL MAJOR FIELDS in the private institutions studied was 12.5 percent. In comparison to Chemistry (8.3%), the faculty in ALL MAJOR FIELDS increased their salaries 1.6 percent more than faculty in Chemistry.
For both studies in the discipline/major field of Chemistry, the faculty mix percentage is higher at the professor rank in comparison to the assistant professor rank: 45.8 percent vs. 27.7 percent (1995-96); and 42.4 percent vs 29.7 percent, (1998-99). The differences in the ranks of professor and assistant professor in ALL MAJOR FIELDS for both private studies are 33.5 percent vs. 30.5 percent (1995-96) and 34.4 percent vs. 29.3 percent (1998-99).

Finally, the hiring rate for new assistant professors in Chemistry was higher than the hiring rate in ALL MAJOR FIELDS in the 1995-96 private study: 5.5 percent (82/1,503) vs. 4.7 percent (2,041/43,114) and higher in the 1998-99 private study: 6.0 percent (92/1,524) vs. 4.9 percent (2,178/44,803).

CONCLUSION

This article presents salary-trend information on the academic discipline/major field of Chemistry and compares that information with both ALL MAJOR FIELDS and the CPI over a period of three years, from the “baseline year” of 1995-96 through the “trend year” of 1998-99. Two studies—one for public institutions, and the other for private institutions—were conducted for the baseline year and for the trend year—a total of four studies. A total of 8,270 (3.1%) faculty in the discipline/major field of Chemistry participated and were included in the 53 disciplines/major fields in each of the four studies and in the overall total of 267,751 participating faculty. The same 279 public institutions and the same 386 private institutions in the United States participated in the baseline year and in the trend year.

Although the public and private studies data may be interpreted in a variety of ways, several significant points are as follows. First, the average faculty salary factors in the discipline/major field of Chemistry for the 1995-96 public study was six percent higher than the same as that of all ranks.
in ALL MAJOR FIELDS (1.00); and for the 1995-96 private study it was three percent higher than the average faculty salary factors for all ranks in ALL MAJOR FIELDS (1.00). In both the public and private studies the average faculty salary factors for all ranks in Chemistry in 1998-99 were five percent higher and one percent lower than the average salary factors for all ranks in ALL MAJOR FIELDS (1.00), respectively.

Second, the October 1998 CPI reflects an 6.7 percent increase over the October 1995 CPI and indicates that the faculty in Chemistry in the public institutions received an average annual salary increase of .7 percent above the cost-of-living. In the private institutions the annual average salary increase was .5 percent above the cost-of-living.

Third, in both the 1995-96 and 1998-99 public studies in Chemistry, the professor rank FAC MIX PCTs are higher than those for the assistant professor rank. In the 1995-96 and 1998-99 private studies the FAC MIX PCTS were higher at the professor rank than at the assistant professor rank, as well.

Finally, the hiring rate of new assistant professors in Chemistry in the 1995-96 and 1998-99 public studies and in the 1995-96 and 1998-99 private studies were higher than the hiring rate of ALL MAJOR FIELDS.

Because a significant data base of average faculty salaries in the academic discipline/major field of Chemistry has now been developed, it is anticipated that this information will serve as a valuable reference and evaluation tool for interested administrators and professors.
Richard D. Howe is the originator and director of the annual CUPA faculty salary studies. He is a professor of leadership and educational studies at Appalachian State University, Boone, North Carolina.

APPENDICES:

A - OVERALL LIST OF SELECTED DISCIPLINES, page 10
B - LIST OF PUBLIC PARTICIPATING INSTITUTIONS, page 11
C - LIST OF PRIVATE PARTICIPATING INSTITUTIONS, page 14
APPENDIX A

OVERALL LIST OF SELECTED DISCIPLINES

ACCOUNTING
ADMINISTRATIVE ASSISTANT AND
SECRETARIAL SERVICES
ANTROPOLOGY
ARCHITECTURE AND RELATED PROGRAMS
AREA, ETHNIC, AND CULTURAL STUDIES
BIOLOGY, GENERAL
BUSINESS ADMINISTRATION AND
MANAGEMENT
BUSINESS MANAGEMENT AND
ADMINISTRATIVE SERVICES
BUSINESS/MANAGERIAL ECONOMICS
CHEMISTRY
COMMUNICATIONS
COMMUNICATIONS TECHNOLOGIES
COMPUTER AND INFORMATION SCIENCES
COUNSELOR EDUCATION/STUDENT
COUNSELING AND GUIDANCE
SERVICES
CRIMINAL JUSTICE AND
CORRECTIONS
CURRICULUM AND INSTRUCTION
DRAMA/THEATER ARTS AND STAGECRAFT
ECONOMICS
EDUCATION
EDUCATION ADMINISTRATION AND
SUPERVISION
ENGINEERING, GENERAL
ENGINEERING-RELATED
TECHNOLOGIES
ENGLISH LANGUAGE AND
LITERATURE/LETTERS, GENERAL
ENTERPRISE MANAGEMENT AND
OPERATION
FINE ARTS AND ART STUDIES
FOREIGN LANGUAGES AND LITERATURES
GEOGRAPHY
GEOLOGICAL AND RELATED STUDIES
HISTORY, GENERAL
HOME ECONOMICS, GENERAL
LIBRARY SCIENCE
MARKETING MANAGEMENT AND RESEARCH
MATHEMATICS
MULTI/INTERDISCIPLINARY STUDIES
MUSIC
NURSING (R.N. TRAINING)
OCUPATIONAL THERAPY
PARKS, RECREATION AND LEISURE STUDIES
PHILOSOPHY AND RELIGION
PHYSICAL SCIENCES, GENERAL
PHYSICAL THERAPY
PHYSICS
POLITICAL SCIENCE AND GOVERNMENT
PSYCHOLOGY, GENERAL
PUBLIC HEALTH
READING TEACHER EDUCATION
SOCIAL SCIENCES, GENERAL
SOCIAL WORK
SOCIOLOGY
SPECIAL EDUCATION
SPEECH- LANGUAGE PATHOLOGY AND
AUDIOLOGY
TEACHER EDUCATION, SPECIFIC ACADEMIC
AND VOCATIONAL PROGRAMS
VISUAL AND PERFORMING ARTS

TOTAL 53
APPENDIX B


Institutions Participating in Both Studies:

- Alcorn State University (MS)
- Angelo State University (TX)
- Appalachian State University (NC)
- Arizona State University-West (AZ)
- Arkansas State University (AR)
- Arkansas Tech University (AR)
- Armstrong Atlantic State University (GA)
- Auburn University-Montgomery (AL)
- Augusta State University (GA)
- Austin Peay State University (TN)
- Ball State University (IN)
- Bemidji State University (MN)
- Bloomsburg University of Pennsylvania (PA)
- Bluefield State College (WV)
- Boise State University (ID)
- Bowie State University (MD)
- Bridgewater State College (MA)
- California Polytechnic State University-San Luis Obispo (CA)
- California State University-Los Angeles (CA)
- California State University-Northridge (CA)
- California State University-Stanislaus (CA)
- Central Michigan University (MI)
- Central Missouri State University (MO)
- Central Washington University (WA)
- Citadel, the Military College of South Carolina, The (SC)
- City University of New York-Bernard M. Baruch College (NY)
- Clarion University of Pennsylvania (PA)
- Clayton College and State University (GA)
- Clemson University (SC)
- Cleveland State University (OH)
- Clinch Valley College of the University of Virginia (VA)
- Coastal Carolina University (SC)
- College of Charleston (SC)
- College of New Jersey, The (NJ)
- College of William and Mary (VA)
- Colorado School of Mines (CO)
- Columbus State University (GA)
- Dakota State University (SD)
- Delta State University (MS)
- East Carolina University (NC)
- East Central University (OK)
- East Tennessee State University (TN)
- Eastern Illinois University (IL)
- Eastern Kentucky University (KY)
- Eastern Michigan University (MI)
- Eastern New Mexico University Main Campus (NM)
- Eastern Washington University (WA)
- Edinboro University of Pennsylvania (PA)
- Emporia State University (KS)
- Fairmont State College (WV)
- Ferris State University (MI)
- Fitchburg State College (MA)
- Florida International University (FL)
- Fort Hays State University (KS)
- Fort Lewis College (CO)
- Francis Marion University (SC)
- Frostburg State University (MD)
- George Mason University (VA)
- Georgia College & State University (GA)
- Georgia Institute of Technology (GA)
- Georgia Southern University (GA)
- Georgia Southwestern State University (GA)
- Georgia State University (GA)
- Glenville State College (WV)
- Grand Valley State University (MI)
- Henderson State University (AR)
- Idaho State University (ID)
- Illinois State University (IL)
- Indiana State University (IN)
- Indiana University-Bloomington (IN)
- Indiana University-East (IN)
- Indiana University-Kokomo (IN)
- Indiana University-Northwest (IN)
- Indiana University-Purdue University Fort Wayne (IN)
- Indiana University-Purdue University Indianapolis (IN)
- Indiana University-Purdue University Indianapolis (IN)
- Indiana University-South Bend (IN)
- Indiana University-Southeast (IN)
- Indiana University of Pennsylvania (PA)
- Jacksonville State University (AL)
- James Madison University (VA)
- Keene State College (NH)
- Kennesaw State University (GA)
- Kent State University (OH)
- Kutztown University of Pennsylvania (PA)
- Lamar University-Beaumont (TX)
- Lander University (SC)
- Lock Haven University of Pennsylvania (PA)
- Longwood College (VA)
- Louisiana State University and A & M College (LA)
- Louisiana State University-Shreveport (LA)
- Louisiana Tech University (LA)
- Marshall University (WV)
- Massachusetts College of Liberal Arts (MA)
University of Michigan-Dearborn (MI)
University of Minnesota-Duluth (MN)
University of Minnesota-Morris (MN)
University of Missouri-Kansas City (MO)
University of Missouri-Saint Louis (MO)
University of Montana-Missoula, The (MT)
University of Montevallo (AL)
University of Nebraska-Kearney (NE)
University of Nebraska-Omaha (NE)
University of Nevada-Las Vegas (NV)
University of Nevada-Reno (NV)
University of North Alabama (AL)
University of North Carolina-Asheville (NC)
University of North Carolina-Charlotte (NC)
University of North Carolina-Greensboro (NC)
University of North Carolina-Pembroke (NC)
University of North Carolina-Wilmington (NC)
University of North Florida (FL)
University of North Texas (TX)
University of Northern Colorado (CO)
University of Pittsburgh-Bradford (PA)
University of Puerto Rico Arecibo University College (PR)
University of South Alabama (AL)
University of South Carolina-Aiken (SC)
University of South Carolina Spartanburg (SC)
University of South Dakota-Vermillion (SD)
University of South Florida-Tampa (FL)
University of Southern Colorado (CO)
University of Southern Indiana (IN)
University of Southern Mississippi (MS)
University of Southwestern Louisiana (LA)
University of Tennessee-Chattanooga (TN)
University of Tennessee-Martin (TN)
University of Tennessee-Memphis (TN)
University of Texas-Arlington (TX)
University of Texas-Dallas (TX)
University of Texas-El Paso (TX)
University of Texas-Pan American (TX)
University of Texas-San Antonio (TX)
University of Texas-Tyler (TX)
University of the Virgin Islands (VI)
University of Toledo (OH)
University of West Alabama, The (AL)
University of West Florida (FL)
University of Wisconsin-Eau Claire (WI)
University of Wisconsin-Green Bay (WI)
University of Wisconsin-La Crosse (WI)
University of Wisconsin-Oshkosh (WI)
University of Wisconsin-Parkside (WI)
University of Wisconsin-Platteville (WI)
University of Wisconsin-Stevens Point (WI)
University of Wisconsin-Stout (WI)
University of Wisconsin-Superior (WI)
University of Wisconsin-Whitewater (WI)
Valdosta State University (GA)
APPENDIX C


Institutions Participating in Both Studies:

Abilene Christian University (TX)
Adrian College (MI)
Agnes Scott College (GA)
Albertson College (ID)
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Albion College (MI)
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Alderson Broaddus College (WV)
Alfred University (NY)
Allegheny College (PA)
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Alma College (MI)
Alvernia College (PA)
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Clear Creek Baptist Bible College (KY)
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