

## 1996-1997 CRA Taulbee Survey

# Undergrad Enrollments Keep Booming, Grad Enrollments Holding Their Own

By Dexter Kozen and Stu Zweben, Co-chairs, CRA Taulbee Survey

This article and the accompanying tables present the results of the 27th annual CRA Taulbee Survey<sup>1</sup> of Ph.D. granting departments of computer science (CS) and computer engineering (CE) in the United States and Canada. This survey is conducted annually by CRA for the purpose of documenting trends in student enrollment, employment, and faculty salaries. Information is gathered during the fall and early winter. Responses received by January 22 are included in the tables.

Information on degree production and enrollment applies to the previous academic year (1996-1997). Information on faculty salaries applies to the current academic year (1997-1998). Faculty salaries are those effective January 1, 1998. Readers should keep in mind that survey results are from Ph.D. granting departments only.

This article reviews the most significant results of the survey, with particular attention to those that differ markedly from last year or that appear to indicate long-term trends.

This year we received responses<sup>2</sup> from 129 (bachelors) 133 (masters and Ph.D) departments regarding production; 129 (bachelors), 133 (masters), and 135 (Ph.D.) departments regarding enrollment; 135 departments regarding faculty growth; and 130 departments regarding salary data (this includes US CS, US CE, and Canadian) for a

response rate of over 80%. We thank all respondents for their timely completion of the questionnaire

### Degree Production (Tables 1-6)

There were a total of 894 Ph.D. degrees awarded in 1997 by the 131 responding departments. This is down from 915 last year and continues a slight but steady downward trend from the peak of 1,113 in 1992. The prediction from last year's survey that 1,110 Ph.D.'s would be awarded in 1997 was again overly optimistic, but this year the discrepancy was even greater than normal. The forecast for next year is a continued decline, perhaps as much as 8%. However, new enrollment in Ph.D. programs is up significantly for the second straight year (see the section on enrollments, Table 9) and there was a 14% increase over last year in the number of students passing the qualifying exam, so a long-term upswing in Ph.D. production is likely if programs can retain their newly enrolled students.

Table 4 gives the areas of specialization and types of first appointments for last year's Ph.D. recipients. The expanded format introduced last year was kept, with 10 areas of specialization instead of the previous 6 and further breakdown according to the type of position in Ph.D. granting departments. There was significant improvement in the percentage of unknown areas of specialization, dropping to 19.0% from 21.3% last year.

The number of bachelor's degrees awarded in 1997 by 131 responding departments was 8,063, off 4.1%

from the 8,411 produced by 128 departments in 1996, but still significantly higher than the 7,561 awarded in 1995. The number of master's degrees, which was essentially flat between 1995 and 1996 with 130 departments reporting, rose about 4.3% in 1997 with 131 departments reporting.

The gender and ethnicity statistics for bachelor's and master's degree recipients remained fairly static with the exception of master's degrees awarded to Native Americans or Alaskan natives, which dropped precipitously from 45 to 4. However, the percentage of master's degrees awarded to women (among degree recipients of known gender) rose from 20.4% in 1996 to 22.7% in 1997. For Ph.D. recipients, the combined gender and ethnicity statistics were not reported this year because of the difficulty in collecting the data, but gender and ethnicity were reported separately (Tables 2 and 3). There was an alarming drop in the number of Ph.D. degrees awarded to Native Americans (from 5 in 1996 to 0 in 1997), African Americans (from 11 in 1996 to 6 in 1997), and Hispanics (from 27 in 1996 to 8 in 1997). The percentage of Ph.D. degrees awarded to women showed a modest rise from 12% in 1996 to 14% in 1997.

### Student Enrollment (Tables 9-11)

The big news is the continued explosion in undergraduate enrollments for the second straight year (Table 9). Still reeling from last year's 40% increase over the previous year, academic departments were hit with another 39% jump in 1997.

This will undoubtedly translate to a significant rise in the number of bachelor's degrees awarded starting next year. Meanwhile, many departments are finding their resources stretched to the limit as they struggle to cope with overflowing classrooms. At Cornell, more than a quarter of those freshmen engineers expressing a preference listed computer science as their major of choice (more than any other engineering major) and by 1999, the number of graduating computer science majors will have more than doubled since 1995. At Ohio State, the number of premajors (those who haven't yet completed all the requirements to formally be admitted to a major) in computer science jumped 35% over last year. As a percentage of undergraduate engineering students, computer scientists have risen to 19.5%, up from 15.8% last year and 10.9% the year before.

Enrollments also increased at the graduate level, but somewhat less dramatically. From 1995 to 1996, new enrollment in Ph.D. programs rose sharply by about 26%. In 1997 the trend continued with 1,440 Ph.D. students enrolled, a rise of 7% over 1996, with 131 departments reporting in 1997 versus 130 in 1996. Master's degree enrollments remained relatively static.

The percentage of women enrolled in Ph.D. programs increased slightly from 16.2% in 1996 to 17.0% in 1997. But the major demographic change is in ethnicity of students in the Ph.D. programs.

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**Table 1. Ph.D. Production by Ranking**

	Ph.D.s Produced	Average per Dept.	Ph.D.s Next Year	Average per Dept.	Passed Qualifier	Average per Dept.
US CS Ranked 1-12	207	17.3	237	19.8	186	15.5
US CS Ranked 13-24	111	11.1	117	11.7	124	12.4
US CS Ranked 25-36	102	9.3	110	10.0	92	8.4
US CS Other	343*	4.4	426+	5.5	484	6.2
Canadian CS	89@	12.7	93~	13.3	81	11.6
US CE	41#	6.8	54&	9.0	35	5.8
<b>Total</b>	<b>893**</b>	<b>7.2</b>	<b>1,037</b>	<b>8.4</b>	<b>1,002</b>	<b>8.1</b>

**Table 2. Gender of Ph.D. Recipients**

	CS	CE	CS & CE
Male	699 (85%)	64 (90%)	763 (85%)
Female	122 (15%)	7 (10%)	129 (14%)
<b>Total</b>	<b>823**</b>	<b>71</b>	<b>894</b>

**Table 3. Ethnicity of Ph.D. Recipients**

	CS	CE	CS & CE
Nonresident Alien	298 (36%)	27 (38%)	325 (36%)
African American, Non-Hispanic	5 (1%)	1 (1%)	6 (1%)
Native American or Alaskan Native	0 (0%)	0 (0%)	0 (0%)
Asian or Pacific Islander	99 (12%)	8 (11%)	107 (12%)
Hispanic	7 (1%)	1 (1%)	8 (1%)
White, Non-Hispanic	365 (44%)	23 (32%)	388 (43%)
Other/Not Listed	22 (3%)	11 (0%)	33 (4%)
<b>Subtotal</b>	<b>796 (97%)</b>	<b>71 (100%)</b>	<b>867 (97%)</b>
Ethnicity Unknown	27 (3%)	0 (0%)	27 (3%)
<b>Total</b>	<b>823 (100%)</b>	<b>71 (100%)</b>	<b>894 (100%)</b>

**Table 1**

- \* Includes 29 CE degrees granted by these CS departments
- @ Includes 6 CE degrees granted by these Canadian departments
- # Includes 10 CS degrees granted by these CE departments
- + Includes 39 CE degrees granted by these CS departments
- ~ Includes 10 CE degrees granted by these Canadian departments
- & Includes 14 CS degrees granted by these CE departments

### Footnotes

<sup>1</sup> The title of the survey honors the late Orrin E. Taulbee of the University of Pittsburgh, who conducted these surveys for the Computer Science Board from 1970 until 1984.

<sup>2</sup> In some instances, departments only answered selective questions within a table or a section. Therefore, for individual fields within tables the response rate may vary  $\pm 3$ .

\*\*Totals do not match: The reader may find that totals from certain tables do not equal each other, even though theoretically they should. These discrepancies stem from inconsistencies in the way departments answered different questions. We tried to minimize this by calling departments that provided inconsistent answers.

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Table 4. Employment of New Ph.D. Recipients by Specialty

New Ph.D.'s in Ph.D.-Granting Depts.	Artificial Intelligence/ Robotics	Hardware/Architecture	Numerical Analysis/ Scientific Computing	Programming Languages/ Compilers	OS/Networks	Software Engineering	Theory/Algorithms	Graphics/ Human Interfaces	Databases/ Information Systems	Other/Unknown	Total
Researchers	11	1	5	4	3	4	5	6	6	4	49
Postdocs	18	5	7	6	1	2	11	1	1	3	55
Instructors	7	1	0	1	2	1	0	1	0	9	22
<b>New Ph.D.'s, Other Categories</b>											
Other CS/CE Dept.	8	0	2	4	2	0	7	1	5	1	28
Non-CS/CE Dept.	2	1	0	1	0	3	0	3	3	1	14
Industry	57	42	19	37	81	33	37	25	41	50	422
Government	3	2	0	3	4	3	1	3	1	7	27
Self-Employed	6	0	0	0	1	1	2	1	0	4	15
Employed Abroad	7	3	2	2	2	4	5	2	7	9	43
Unemployed	0	1	1	3	0	0	1	1	1	0	8
Other/Unknown	5	0	3	2	1	3	3	1	2	80	100
<b>Total</b>	<b>145</b>	<b>62</b>	<b>40</b>	<b>79</b>	<b>117</b>	<b>60</b>	<b>89</b>	<b>56</b>	<b>76</b>	<b>170</b>	<b>894</b>

Table 5. Gender of Bachelor's and Master's Recipients

	Bachelor's			Master's		
	CS	CE	Total	CS	CE	Total
Male	5,284 (75%)	786 (74%)	6,070 (75%)	2,870 (76%)	498 (74%)	3,368 (76%)
Female	1,141 (16%)	124 (12%)	1,265 (16%)	819 (22%)	172 (16%)	991 (22%)
Unknown	577	151	728	84	-	84
<b>Total</b>	<b>7,002</b>	<b>1,061</b>	<b>8,063</b>	<b>3,773</b>	<b>670</b>	<b>4,443</b>

Table 6. Ethnicity of Bachelor's and Master's Recipients

	Bachelor's			Master's		
	CS	CE	Total	CS	CE	Total
Nonresident Alien	400	71	471 (6%)	1,585	313	1,898 (43%)
African American, Non-Hispanic	123	34	157 (2%)	44	4	48 (1%)
Native American or Alaskan Native	9	4	13 (-%)	4	0	4 (-%)
Asian or Pacific Islander	936	159	1,095 (14%)	442	76	518 (12%)
Hispanic	146	34	180 (2%)	56	10	66 (2%)
White, Non-Hispanic	3,145	586	3,731 (46%)	1,186	147	1,333 (31%)
Other/Not Listed	56	5	61 (1%)	96	10	106 (2%)
<b>Subtotal</b>	<b>4,815</b>	<b>893</b>	<b>5,708 (71%)</b>	<b>3,413</b>	<b>560</b>	<b>3,973 (89%)</b>
Ethnicity Unknown	2187	168	2,355 (29%)	360	110	470 (11%)
<b>Total</b>	<b>7,002</b>	<b>1,061</b>	<b>8,063 (100%)</b>	<b>3,773</b>	<b>670</b>	<b>4,443 (100%)</b>

Table 7. Bachelor's Degree Candidates for 1997-98

	CS	CE	CS & CE
US CS Ranked 1-12	1,335 (17%)	48 (4%)	1,383 (15%)
US CS Ranked 13-24	754 (9%)	194 (17%)	948 (10%)
US CS Ranked 25-36	482 (6%)	36 (3%)	518 (6%)
US CS Other	3,882 (47%)	691 (61%)	4,573 (49%)
Canadian CS	1,622 (20%)	50 (4%)	1,672 (18%)
US CE	40 (1%)	124 (11%)	164 (2%)
<b>Total</b>	<b>8,115 (100%)</b>	<b>1,143 (100%)</b>	<b>9,258 (100%)</b>

Table 8. Master's Degree Candidates for 1997-98

	CS	CE	CS & CE
US CS Ranked 1-12	554 (14%)	65 (10%)	619 (13%)
US CS Ranked 13-24	446 (11%)	3 (1%)	449 (10%)
US CS Ranked 25-36	348 (9%)	0 (0%)	348 (8%)
US CS Other	2,249 (57%)	166 (26%)	2,415 (52%)
Canadian CS	285 (7%)	50 (7%)	335 (7%)
US CE	83 (2%)	365 (56%)	448 (10%)
<b>Total</b>	<b>3,965 (100%)</b>	<b>488 (100%)</b>	<b>4,614 (100%)</b>

Table 9. New Students in Fall 1997

	Bachelor's Full Time			Dept Average	Master's Full Time			Dept Average	Ph.D. Full Time			Dept Average
	CS	CE	Total		CS	CE	Total		New Admit	MS to Ph.D	Total	
US CS Ranked 1-12	2,244	63	2307	192.3	345	48	393	32.8	267	14	281	23.4
US CS Ranked 13-24	1,379	469	1848	184.8	437	5	442	40.2	189	22	211	21.1
US CS Ranked 25-36	841	0	841	84.1	194	0	194	17.6	188	7	195	17.7
US CS Other	9,233	1,450	10,683	138.7	1,697	128	1,825	23.1	558	85	643	8.2
Canadian CS	3,462	144	3,606	240.4	299	26	325	21.7	68	18	86	3.7
US CE	102	416	518	74	56	175	231	33	22	2	24	3.4
<b>Total</b>	<b>17,261</b>	<b>2,542</b>	<b>19,803</b>		<b>3,028</b>	<b>382</b>	<b>3,410</b>		<b>1,292</b>	<b>148</b>	<b>1,440</b>	

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**Table 10. Gender of Enrolled Ph.D. Students**

	CS	CE	CS & CE
Male	5,086	406	5,492
Female	1,079	77	1,156
Unknown	141	0	141
<b>Total</b>	<b>6,306</b>	<b>483</b>	<b>6,789</b>

**Table 11. Ethnicity of Enrolled Ph.D. Students**

	CS	CE	CS & CE
Nonresident Alien	2,610	324	2,934
African American, Non-Hispanic	120	8	128
Native American or Alaskan Native	5	3	8
Asian or Pacific Islander	520	19	539
Hispanic	102	9	111
White, Non-Hispanic	2,482	111	2,493
Other/Not Listed	155	3	158
<b>Subtotal</b>	<b>5,994</b>	<b>477</b>	<b>6,471</b>
Ethnicity Unknown	312	6	318
<b>Total</b>	<b>6,306</b>	<b>483</b>	<b>6,789</b>

**Table 12. Prior Education of New Ph.D. Students**

Bachelor's in CS or CE			% of Total
US CS Ranked 1-12	191 of	281	(68%)
US CS Ranked 13-24	111 of	211	(53%)
US CS Ranked 25-36	157 of	195	(81%)
US CS Other	377 of	643	(59%)
Canadian CS	70 of	86	(81%)
US CE	11 of	24	(46%)
<b>Total</b>	<b>917 of</b>	<b>1,440</b>	<b>(64%)</b>

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The percentage of nonresident aliens jumped from 35.6% in 1996 to 45.3% in 1997. In contrast, the percentage of Asian and Pacific Islanders dropped sharply. This may be partially attributable to a change in the survey form, which more clearly distinguished residents from nonresidents. It may be that in previous years many nonresident aliens were classified as Asian or Pacific Islanders. Adding the two groups together accounted for 49.5% of the total in 1996 and 53.7% in 1997.

### Faculty Demographics

In 1996, 77.7% of tenure-track faculty were associate or full professors, while in 1997 the percentage rose to 80.1%.

### Faculty Salaries

Average salaries at US institutions rose 2.5-4.3%, with the smallest increase at the full professor level and the largest at the assistant professor level (Table 27). Canadian salaries fared worse, posting only a 1-3.5% increase. Salaries for US institutions are 9-month salaries and are reported in US dollars; those for Canadian institutions are 12-month salaries

and are reported in Canadian dollars.

The overall mean salaries reported in the center column in Tables 20-28 are unweighted means, calculated by averaging the mean salaries as reported by each school. They are not weighted by the number of faculty.

### Rankings

For tables that group computer science departments by rank, the rankings are based on information collected in the 1995 assessment of research and doctorate programs in the United States by the National Research Council.

The top 12 schools in this ranking are Stanford University, Massachusetts Institute of Technology, University of California at Berkeley, Carnegie Mellon University, Cornell University, Princeton University, University of Texas at Austin, University of Illinois at Urbana-Champaign, University of Washington, University of Wisconsin at Madison, Harvard University, and California Institute of Technology.

The departments ranked 13-24 are Brown University, Yale University, University of California at Los Angeles, University of Maryland at

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## Faculty Growth in Fiscal Year 1997 - 1998

**Table 13. Anticipated Faculty Growth by Position**

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Five-Year Increase	
Tenure-Track	2,503	2,505	2,469	2,576	2,636	2,672	169	(7%)
Researcher	303	327	358	374	390	406	103	(34%)
Postdoc	209	232	253	270	283	297	88	(42%)
Instructor	317	317	321	318	321	324	7	(2%)
Other/Not Listed	159	142	213	146	148	150	-9	(-6%)
<b>Total</b>	<b>3,491</b>	<b>3,523</b>	<b>3,614</b>	<b>3,684</b>	<b>3,778</b>	<b>3,849</b>	<b>358</b>	<b>(10%)</b>

**Table 14. Anticipated Faculty Growth by Ranking**

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	Five-Year Increase	
US CS Ranked 1-12	526	489	515	534	547	553	27	(5%)
US CS Ranked 13-24	407	440	464	437	447	458	51	(13%)
US CS Ranked 25-36	305	301	322	334	319	324	19	(6%)
US CS Other	1,640	1,661	1,691	1,731	1,799	1,836	196	(12%)
Canadian CS	485	495	478	498	509	518	33	(7%)
US CE	128	137	144	150	157	160	32	(25%)
<b>Total</b>	<b>3,491</b>	<b>3,523</b>	<b>3,614</b>	<b>3,684</b>	<b>3,778</b>	<b>3,849</b>	<b>358</b>	<b>(10%)</b>

**Table 15. Gender of Newly Hired Faculty**

	Tenure-Track		Researcher		Postdoc		Other	
Male	117	(83%)	47	(85%)	66	(92%)	69	(78%)
Female	24	(17%)	8	(15%)	6	(8%)	19	(22%)
<b>Total</b>	<b>141</b>		<b>55</b>		<b>72</b>		<b>88</b>	

**Table 16. Ethnicity of Newly Hired Faculty**

	Tenure-Track		Researcher		Postdoc		Other	
Nonresident Alien	16	(11%)	7	(13%)	17	(24%)	0	(0%)
African American, Non-Hispanic	2	(1%)	2	(4%)	0	(0%)	1	(1%)
Native American or Alaskan Native	0	(0%)	0	(0%)	0	(0%)	0	(0%)
Asian or Pacific Islander	31	(22%)	12	(22%)	14	(19%)	16	(18%)
Hispanic	2	(1%)	0	(0%)	2	(3%)	0	(0%)
White, Non-Hispanic	84	(60%)	32	(58%)	35	(49%)	65	(74%)
Other/Not Listed	2	(1%)	0	(0%)	0	(0%)	3	(3%)
<b>Subtotal</b>	<b>137</b>	<b>(96%)</b>	<b>53</b>	<b>(97%)</b>	<b>68</b>	<b>(95%)</b>	<b>85</b>	<b>(96%)</b>
Did Not Indicate	4	(3%)	2	(4%)	4	(6%)	3	(3%)
<b>Total</b>	<b>141</b>		<b>55</b>		<b>72</b>		<b>88</b>	

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College Park, New York University, University of Massachusetts at Amherst, Rice University, University of Southern California, University of Michigan, University of California at San Diego, Columbia University, and University of Pennsylvania<sup>3</sup>

The departments ranked 25-36 are University of Chicago, Purdue University, Rutgers—the State University of New Jersey, Duke University, University of North Carolina at Chapel Hill, University

of Rochester, State University of New York at Stony Brook, Georgia Institute of Technology, University of Arizona, University of California at Irvine, University of Virginia, and Indiana University.

**Acknowledgments**

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<sup>3</sup> Although the University of Pennsylvania and the University of Chicago were tied in the National Research Council rankings, CRA made the arbitrary decision to place Pennsylvania in the second tier of schools.

*All ethnicity tables:* "Asian" includes people originating from the Pacific Islands, China, Japan, Korea, the Philippine Islands, Samoa, India and Vietnam; "white" includes people originating from Europe, North Africa and the Middle East.

*All tables with rankings:* Statistics sometimes are given according to departmental rank. Schools are ranked only if they offer a CS degree and according to the quality of its CS program as determined by reputation. Those that only offer CE degrees are not ranked, and statistics are given on a separate line, apart from the rankings. In Table 1, the "Ph.D.s Produced" column shows the number of CS and CE degrees produced throughout the rankings. While CE degrees are mixed into all rank categories, there are no CS degrees in the CE category.

*All faculty tables:* The survey makes no distinction between faculty specializing in CS versus CE programs. We tried to minimize inclusion of any faculty in electrical engineering.

**Table 17. Gender of Professors**

	Assistant	Associate	Full
Male	411 (80%)	848 (90%)	1044 (94%)
Female	101 (20%)	100 (10%)	62 (6%)
Unknown	2 -	0	0
<b>Total</b>	<b>514</b>	<b>948</b>	<b>1,106</b>

**Table 18. Ethnicity of Professors**

	Assistant	Associate	Full
Nonresident Alien	36 (7%)	6 (1%)	6 (1%)
African American, Non-Hispanic	5 (1%)	5 (1%)	2 (-%)
Native American or Alaskan Native	1 (-%)	0 (0%)	1 (-%)
Asian or Pacific Islander	102 (20%)	230 (24%)	140 (13%)
Hispanic	15 (3%)	6 (1%)	13 (1%)
White, Non-Hispanic	328 (64%)	651 (67%)	863 (78%)
Other/Not Listed	15 (3%)	18 (2%)	32 (3%)
<b>Subtotal</b>	<b>502 (98%)</b>	<b>934 (96%)</b>	<b>942 (96%)</b>
Ethnicity Unknown	12 (2%)	32 (3%)	49 (4%)
<b>Total</b>	<b>514 (100%)</b>	<b>966 (99%)</b>	<b>1,106 (100%)</b>

**Table 19. Faculty Losses**

	Total
Died	5
Retired	37
Took Academic Position Elsewhere	62
Took Nonacademic Position	53
Remained, Changed to Part Time	9
Other	9
Unknown	2
<b>Total</b>	<b>177</b>

### Faculty Salaries in Fiscal Year 1997 - 1998

**Table 20. Nine-Month Salaries, 111 Responses of 133 US CS Departments**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Assistant	434	\$29,000	\$54,880	\$68,000	\$58,297	\$49,822	\$60,752	\$80,000
Associate	757	\$33,000	\$59,972	\$82,500	\$66,544	\$52,436	\$73,904	\$97,200
Full	906	\$41,000	\$72,028	\$110,367	\$89,821	\$60,850	\$113,488	\$212,500

**Table 21. Nine-Month Salaries, 11 Responses of 12 US CS Departments Ranked 1-12**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all Salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Assistant	63	\$56,921	\$59,488	\$65,000	\$63,065	\$62,000	\$67,195	\$74,300
Associate	92	\$49,050	\$64,040	\$69,510	\$72,351	\$75,500	\$81,203	\$95,000
Full	180	\$41,200	\$73,180	\$82,500	\$100,456	\$100,000	\$137,031	\$166,335

**Table 22. Nine-Month Salaries, 11 Responses of 12 US CS Departments Ranked 13-24**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all Salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Assistant	40	\$53,000	\$59,985	\$64,000	\$62,779	\$62,000	\$65,412	\$76,965
Associate	75	\$54,241	\$67,045	\$78,151	\$72,793	\$70,800	\$80,056	\$94,950
Full	141	\$64,672	\$81,157	\$110,367	\$103,905	\$112,510	\$134,975	\$212,500

**Table 23. Nine-Month Salaries, 11 Responses of 12 US CS Departments Ranked 25-36**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all Salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Assistant	47	\$53,000	\$57,059	\$60,500	\$59,522	\$57,161	\$61,795	\$68,600
Associate	74	\$56,407	\$64,162	\$70,600	\$69,248	\$66,506	\$73,812	\$83,700
Full	109	\$66,574	\$75,602	\$92,800	\$94,210	\$90,180	\$123,527	\$173,850

**Table 24. Nine-Month Salaries, 78 Responses of 97 US CS Departments Ranked Higher than 36 or Unranked**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all Salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Assistant	284	\$29,000	\$53,204	\$68,000	\$56,064	\$49,822	\$59,048	\$80,000
Associate	516	\$33,000	\$57,887	\$82,500	\$64,612	\$52,436	\$72,186	\$97,200
Full	476	\$41,000	\$69,968	\$110,000	\$85,623	\$60,850	\$105,302	\$170,000

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**Table 25. Nine-Month Salaries, 6 Responses of 13 US CE Departments**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all Salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Assistant	18	\$51,918	\$55,541	\$60,000	\$57,897	\$55,000	\$61,238	\$67,322
Associate	45	\$56,000	\$60,330	\$64,000	\$66,505	\$59,000	\$72,451	\$78,785
Full	33	\$59,000	\$75,531	\$83,500	\$84,871	\$75,298	\$100,785	\$132,700

**Table 26. Twelve-Month Salaries, 13 Responses of 17 Canadian CS Departments (Canadian Dollars)**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all Salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Assistant	51	\$40,868	\$52,590	\$69,689	\$56,991	\$48,000	\$61,907	\$75,314
Associate	132	\$51,920	\$61,428	\$82,541	\$70,457	\$64,921	\$81,868	\$125,233
Full	149	\$59,270	\$76,062	\$93,318	\$91,415	\$87,757	\$112,523	\$160,126

**Table 27. Nine-Month Salaries, 110 Responses of 146 US CS and CE Departments**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all Salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Assistant	452	\$29,000	\$54,915	\$68,000	\$57,755	\$49,822	\$60,788	\$80,000
Associate	802	\$33,000	\$59,994	\$82,500	\$66,542	\$52,436	\$73,816	\$97,250
Full	939	\$41,000	\$72,243	\$110,367	\$89,566	\$60,850	\$112,708	\$212,500

**Table 28. Nine-Month Salaries for New Ph.D's, Responding US CS and CE Departments**

Faculty Rank	# Faculty	Reported Salary Minimums			Average of all Salaries	Reported Salary Maximum		
		Minimum	Mean	Maximum		Minimum	Mean	Maximum
Tenure	30	\$29,000	\$51,037	\$72,000	\$53,011	\$48,000	\$60,315	\$80,000
Researcher	13	\$40,000	\$48,006	\$62,000	\$50,666	\$40,000	\$54,612	\$90,000
Postdoc	21	\$15,000	\$36,876	\$52,000	\$39,606	\$25,000	\$41,816	\$56,375
Other	10	\$30,000	\$46,350	\$60,000	\$46,350	\$30,000	\$46,350	\$60,000