



Medical College of Georgia
GEORGIA'S HEALTH SCIENCES UNIVERSITY

**Department of Biostatistics
Biostatistics Consulting and Survey Center**

2009 Salary Survey of Business, Industry, and Government Statisticians

**Final Report
July 27, 2009**

Prepared for the
American Statistical Association
Committee on Statistical Partnerships among Academe, Industry, and Government

Prepared by
James K. Dias
Department of Biostatistics
Biostatistics Consulting and Survey Center
Medical College of Georgia

1120 15th Street, AE-1000, Augusta, GA 30912-4900
Phone: (706) 721-3785 Fax: (706) 721-6294

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2009 Salary Survey of Business, Industry, and Government Statisticians

Table of Contents

I. SURVEY DESIGN AND ADMINISTRATION	1
Background	1
Project Staff	1
Sample Design	2
Changes to Previous Survey Design	2
II. SURVEY IMPLEMENTATION AND PROCEDURES	2
Project Planning	2
Survey Development	2
Site Security	3
Respondent Activity	3
Data and Response Management	3
Data Collection Procedure	3
III. FINAL RESULTS AND RESPONSE RATES	4
Respondent Characteristics	5
Salary Statistics	6
IV. COMMENTS AND SUGGESTIONS	7
V. ACKNOWLEDGEMENTS	8
APPENDICES	
A. 2009 Survey Questions	9
B. Letter - Initial	11
C. E-Mail - Initial	12
D. E-Mail - Sample Reminder	13
E. Descriptive Statistics for Various Questionnaire Items	14
F. Salary Percentiles for Various Questionnaire Items	19
G. Percentiles (10, 25, 50, 75, 90) of Annual Salary for Managerial Responsibility by Years Experience by Highest Degree	21
H. Percentiles (10, 25, 50, 75, 90) of Annual Salary for Respondents with a Bachelors as Highest Degree by Years Experience	22
I. Percentiles (10, 25, 50, 75, 90) of Annual Salary by Employer by Degree	23
J. Percentiles (10, 25, 50, 75, 90) of Annual Salary by Employer by Application Area or Type of Job by Highest Degree	24

2009 SPAIG SALARY SURVEY

I. SURVEY DESIGN AND ADMINISTRATION

Background

The American Statistical Association (ASA) has conducted salary surveys of its membership over several years. The primary purpose of these surveys was to obtain benchmark salary information for statisticians in the US that could be referenced by students, statisticians, and employers of statisticians. This year, the Biostatistics Consulting and Survey Center (BCSC) in the Department of Biostatistics at the Medical college of Georgia (MCG) was contracted by the ASA to design and implement the survey of its non-academic members in the US who are employed by Business, Industries and Government (B/I/G) for the above purpose. This report describes the procedures followed for the sample/survey design and data collection, and the final survey outcomes. The survey was conducted under the directives of Dr. Keith Crank, ASA Assistant Director for Research and Graduate Education, and ASA's Statistics Partnership among Academic, Industry & Government (SPAIG) committee, chaired by Dr. Jai Choi.

For this survey, a **STATISTICIAN** was defined as a person employed in business, industry, or government (not academia) who: (1) had a university/college degree (Bachelors, Masters, Doctorate) in statistics, biostatistics, or mathematical statistics, **OR** had the equivalent of one year of graduate course work in academic statistics (including a Federal Government employee who meets the education requirements for a Mathematical Statistician), **AND** (2) currently used statistical reasoning or performed statistical analyses (including supervision of statisticians) as part of his or her job.

Project Staff

Representatives of ASA involved in this project are Jai Choi, Chair, Statistics Partnership among Academe, Industry & Government (SPAIG) Committee, and the other members of the SPAIG Committee. Department of Biostatistics and BCSC staff members involved in this project are listed in the following table.

MCG BCSC Staff		
Name	Title	Project Responsibilities
James K. Dias, PhD	Associate Professor and Director, BCSC	Survey and sample design, implementation, all on-line programming, and final report preparation
Kelly Miller, MS	Biostatistician and former Manager, BCSC	Survey design, administration, project monitoring, and implementation
Abby Sheff, BS	Administrative Assistant	Management of postal mailing of survey
Kavitha Krishnarao, BS	Administrative Assistant	Administrative support
Anh Le, MS	Biostatistician	Data entry and verification of returned paper surveys
Bayazid Sarkar, MS	Graduate Student	Data entry and verification of returned paper surveys

Sampling Design

Past B/I/G surveys conducted by and for the ASA (prior to the 2007 survey) focused on employers. Sampled ASA member employers were asked to provide salary and demographic information for all statisticians on staff. Difficulties with both privacy and the accessibility of information resulted in response rates lower than desired. The 2007 survey focused on individual ASA members and resulted in a significantly higher response rate (over 60%). The BCSC proposed changes in both sample and survey design that it hoped would both produce rates matching or exceeding those of past surveys and increase the accuracy and usefulness of the information provided. These recommendations were accepted by ASA and SPAIG, and were implemented in the 2009 survey.

For conducting the survey, ASA provided a database of ASA member B/I/G statisticians. The database consisted of 4,921 members from which it was decided by SPAIG and BCSC to select a sample of size 2,000. This sample was to include all members with less than two-years of membership in the ASA (n = 937, 47%) and a simple random sample of the remaining members (n = 1,063, 53%). This was done in hopes of increasing the likelihood of getting more information for those with a Bachelor's degree in statistics or biostatistics.

Changes to Previous Survey Design

BCSC staff worked in collaboration with the ASA and SPAIG to redesign the 2007 survey questionnaire. There were two major changes: (1) We asked those who were employed part-time for their percentage effort so that annualized salary information could be calculated for all respondents. (2) An item on the 2007 questionnaire had 30 categories to describe current employer. That question mixed employer information with area of application and was ambiguous because of overlapping categories. We decided to split that item into two questions: (1) employer type as Federal Government, State/Local Government, For-Profit Business/Industry, Non-Profit Organization, Self-Employed/Private Consultant, or Other; and (2) job type or application area as Pharmaceuticals, Other Medical/Health-Related, General Consulting, or Other (with a comment line to capture this information so that it could be coded into additional categories, if possible).

The final 2009 survey was brief and consisted of only ten items. A password and user ID with a unique PIN # was assigned to each individual in the sample to limit survey access to only those sampled ASA members and to track responses. Advance notice of the survey was advertised in Amstat News and a notice was placed on the SPAIG website.

II. SURVEY IMPLEMENTATION AND PROCEDURES

Project Planning

Planning was completed in the fall of 2008. Programming of the on-line version and all preliminary work necessary to implement both the postal and e-mail invitations were completed by January, 2009. The survey period extended from February through April, 2009. The survey methodology was approved by SPAIG and by the MCG Human Assurance Committee (Institutional Review Board) prior to implementation.

Survey Development

The 2009 SPAIG survey was developed in collaboration with ASA project representatives. The questionnaire was redesigned as noted above and the final survey document appears in Appendix A.

The BCSC chose SurveyMonkey® to implement the on-line version of the survey. The online survey was programmed in late January of 2009 by the BCSC Director. The instrument pages were coded with check boxes for categorical response items with “strong” typing and format control. The instrument was deployed on SurveyMonkey’s website (www.surveymonkey.com) with full user ID and password protection. A unique “collector” was used for each phase of the survey (see below).

The layout of the web instrument was designed using SurveyMonkey’s design templates and closely mimicked the layout of the paper version of the questionnaire. After entering one’s unique PIN, the first question was whether the participant was employed as a statistician (with proper definition): (1) if the respondent answered “NO” they were taken to the end of the questionnaire; (2) If they answered “YES” they were taken to a new page to answer the remaining 9 questions. A minimal amount of scrolling was required to view all questions on a single page.

The online survey was extensively tested and validated. The final version was made available on February 6, 2009.

Site Security

Each ASA member in the database was assigned a password with a unique PIN # to be entered at the survey beginning page in order to gain access to the survey itself. The PIN served as a case ID, and a combination of the two made survey access by unauthorized persons highly unlikely. Instructions in letter and e-mail invitations/reminders provided a name, telephone number, and e-mail address of BCSC project staff that would be available to assist with any difficulties encountered in accessing the survey as well as to answer questions about the survey itself.

Respondent Activity

Respondents were allowed to access their survey as often as they wished using assigned usernames and passwords. If a respondent accessed the survey multiple times, any responses from earlier visits were stored and visible upon re-entering the survey. In addition, answers to specific items could be changed as often as desired until they exited the last page of the survey. When they exited the final page their responses for that session was stored as the “FINAL” version.

Data and Response Management

All data and paradata, as well as sample contact information, were downloaded from SurveyMonkey as an Excel database and ported to SPSS version 17. All data processing and report generation was done using SPSS. Contact information, survey completion status, and general comments were maintained for each member of the sample as an SPSS data file, which was accessible to project staff for reference and for range/validity checks. Periodic progress reports were made available to project staff as needed.

Data Collection Procedure

The database of $n = 4,921$ ASA B/I/G members was received from the ASA in December 2008 and was processed, examined and cleaned by BCSC project staff. Of the 2,000 cases comprising the sample, 23 did not have an e-mail address and could only be contacted by postal mail. On February 6, 2009, the survey was mailed to the 2,000 sampled cases along with an invitation letter to participate and a stamped and addressed return envelope. The invitation letter also gave the recipient the choice to complete the paper questionnaire or the on-line version. This letter described the study

and its purpose, and invited the sampled ASA members to participate; it also included the URL for the web survey and the assigned username and password to be used to access the web survey. A sample invitation letter can be found in Appendix B. Simultaneously, an e-mail invitation was sent to the sampled cases with e-mail addresses (n = 1,977). On March 19 and March 26, 2009 reminder e-mails were sent to those in the sample that had not yet responded (See appendix C for a sample e-mail reminder.)

By late March, the response rate (approximately 30%) was half of what we had hoped for, in spite of reminder e-mails. Consequently, it was decided, in collaboration with ASA staff and SPAIG, to open the survey to the remaining 2,921 members in the database. Of the 2,921 not in the original sample, 94 had missing e-mail addresses. Therefore on April 2, 2009, e-mail invitations were sent to 2,827 B/I/G members not in the original sample. Reminder e-mails were sent to them on April 7 and April 16, 2009. The survey was closed at midnight April 30, 2009.

We ultimately surveyed the entire ASA B/I/G membership with approximately equal probability, and the response rates for the two stages were approximately equal. Even though we sent a questionnaire by postal mail to only those 2,000 in the first phase of the survey, we believe that our “effort”, in the form of initial invitations (both postal and e-mail) with e-mail reminders, was approximately the same for all members. Therefore, the estimates from the two stages were not weighted or adjusted, in any way. They were simply combined to obtain the aggregate estimates.

Completed paper surveys that were received in the mail were entered by BCSC data entry staff into the SurveyMonkey “collector” for paper surveys. Additionally, “collectors” were set up in SurveyMonkey for each reminder e-mail so that the BCSC staff could track respondents by “collector” and whether or not they were in the original sample or in the second wave.

Respondents who were not employed as a statistician or not employed at all, including retired individuals, were classified as not eligible. In addition, respondents who were employed in academia were also classified as ineligible.

Responses were also checked for duplication between the web and paper surveys. The response that had the latest date was used for reporting purposes.

III. FINAL RESULTS AND RESPONSE RATES

Final results, with adjustments, are itemized in the table below. There were 330 e-mail “delivery” failures caused by addresses that were no longer valid (or SPAM filters). Also, the employer classification provided in the dataset from the ASA matched poorly with that reported by the survey participants with only 85.7% agreement.

Responses were received from 2,225 individuals with valid addresses (48.1%). Of the remainder with valid addresses, 2,403 either refused or did not respond (51.9%). Based on the responses received, it was determined that 212 individuals were not eligible to be included in the final analysis. Those who were ineligible were either employed in academia, unemployed, not employed as a statistician, retired, or reported that they did not meet the definition of a statistician. Thirty-eight individuals that were eligible and responded did not report salary information and were re-coded as “non-responders”. When adjusted for delivery failure, eligibility, and non-response, 1,975 (2,225 – 212 - 38) eligible responses were received from an adjusted sample of 4,416 (4,628 - 212), for an adjusted response rate of 44.7%.

2009 SPAIG Salary Survey - Final Report

Original SPAIG Database N = 4921

(Survey Closed Midnight 4/30/09)

Invitation	# Sent	Delivery Failure (# not reached)	# Valid Sent	# Returned as of 5/1/09	% Return	# Ineligible Returned	% Return Adjusted for Ineligible Respondents
Postal with Letter and Return Envelope	2000	5	1995	On-Line 140	18.0	54	15.8
				Paper 221			
				Total 361			
E-Mail and Reminders to Sample	1977 (23 missing e-mail addresses)	131	1846	649	35.6	64	32.8
Postal and E-Mail Combined	2000	0	2000	1010	50.5	118	47.4
E-Mail and Reminders to Balance of Universe not in Original Sample	2827 (94 missing e-mail addresses)	199	2628	1177	44.8	94	42.7
<u>All Combined</u> Postal + E-mail to Sample + E-mail to Balance	4827	199	4628	2187	47.3	212	44.7

The number of ineligible was known only for those who responded. If one assumes a similar proportion of ineligibles for those not responding, then the estimated response rate increases to approximately 47%, still lower than anticipated. The 2007 SPAIG survey had a response rate of over 60% and our goal was to match or exceed that rate. However, it should be noted that the number of responders to the current survey was greater in magnitude than the number for the 2007 survey (the 2007 survey had 1,530 responses and the 2009 survey had 1,975 responses).

Respondent Characteristics

One thousand nine hundred seventy-five (1,975) eligible ASA members responded to the B/I/G salary survey. Their reported characteristics (number and percentage) are given in Appendix E for their current type of employment (full-/part-time), gender, employer classification, highest degree, geographic region, managerial responsibility, years of experience as a statistician, and the application area/job type of current employment.

Eighty-six (86) reported being employed part-time (4.4%) with an average percentage effort of 57% ± 20% (mean ± SD). Their reported percentage effort ranged from 10% to 90% (median 60%).

Sixty-nine percent (69%) of respondents were male. The majority (60%) reported employment by a for-profit-business or industry, followed by federal government (21%) and non-profit organization (10%). Fifty-six percent (56%) reported their highest academic degree as Doctorate, 41% reported as Masters and 2.5% reported as Bachelors. Approximately one-third (33.8%) reported working in the South-Atlantic region of the US, 19% reported Middle-Atlantic and 14% reported the Pacific region. Forty-one percent (41%) reported having managerial responsibility in their current position.

Respondents were asked the first date (month and year) they were ever employed as a statistician. The number of years since first being employed as a statistician (experience) was calculated as the range from reported starting date to March 15, 2009. The average experience was 18.9 years \pm 11.9 years. Experience ranged from zero (for one respondent who had just become employed) to 72.7 years with a median of 17.7 years.

Almost one third (32.9%) reported working in the pharmaceutical area, 20% in other medical/health-care-related areas, 12% in general consulting, and 6% in the survey-/market- research area.

Salary Statistics

Respondents were asked to report their annual base salary (in dollars) and were instructed not to include bonuses, incentives, or other forms of monetary reward. Salary (dollars per year) was “annualized” for part-time-employed respondents. All salary statistics are reported as full-time equivalents in dollars per year.

The average salary reported was \$133,230 \pm \$62,490 and ranged from \$1.00 (for a self-employed statistician who “drew” only \$1.00 dollar from his business) to \$1,440,000 (for a self-employed/private consultant to the pharmaceutical industry). The median salary reported was \$124,000.

Various descriptive statistics are given in Appendix E for the following variables:

1. Quantitative Variables:
 - a. Part-Time % Effort
 - b. Salary
 - c. Years Experience as a Statistician

2. Categorical Variables:
 - a. Full-/Part-Time
 - b. Gender
 - c. Employer
 - d. Highest Degree
 - e. Geographic Region
 - f. Managerial Responsibility
 - g. Years Experience (coded into intervals)
 - h. Application Area or Job Type

Geographic Region was coded as:

Geographic Region	States
South Atlantic	DE, DC, GA, FL, MD, NC, SC, VA, WV
Middle Atlantic	NJ, NY, PA
East North Central	IL, IN, MI, OH, WI
Pacific	AK, CA, HI, OR, WA
New England	CT, MA, ME, NH, RI, VT
West North Central	IA, KS, MN, MO, ND, NE, SD
Other	States not listed above

Appendix F gives Percentiles (10, 25, 50, 75, 90) of Annual Salary overall and for levels of the following Variables:

1. Employer
2. Geographic Region
3. Managerial Responsibility
4. Gender
5. Highest Degree
6. Years Experience
7. Application Area or Job Type

Appendix G gives Percentiles (10, 25, 50, 75, 90) of Annual Salary for Managerial Responsibility by Years Experience by Highest Degree (Masters and Doctorate only).

Appendix H gives Percentiles (10, 25, 50, 75, 90) of Annual Salary for Bachelor as Highest Degree by Experience.

Appendix I gives Percentiles (10, 25, 50, 75, 90) of Annual Salary for Employer by Highest Degree.

Appendix J gives Percentiles (10, 25, 50, 75, 90) of Annual Salary for Employer by Application Area or Type of Job by Highest Degree.

In the salary tables listed above, we suppressed displaying the 10th and 90th percentiles for table rows (categories) with fewer than 20 observations. We also suppressed all percentiles for table rows (categories) with less than 10 observations.

IV. COMMENTS AND SUGGESTIONS

There were 5 postal addresses that were too out-of-date to be delivered and their envelopes were returned to the BCSC.

There were 330 e-mail addresses that were “delivery” failures caused by addresses that were no longer valid.

We strongly recommend a major concerted effort by ASA to update its database of individual members, especially their e-mail/postal addresses and the classification of their employers. As stated before, a substantial numbers of addresses were outdated or non-existent.

From the response rate of the postal mailing (only 15.8 %) and, considering its cost, effort and difficulty, we recommend the total elimination of postal mailings and recommend that future surveys be conducted entirely through e-mail solicitation.

The survey question regarding salary only asked for current annual base salary (in dollars) as a business, industry, or government statistician, and instructed the respondents not to include bonuses, incentives, or other forms of monetary award. Numerous comments were received from those who were self-employed, private contractors, or other types of business employees. They pointed out that a significant portion of their income came from bonuses or incentives. We recommend possible ways of modifying this definition of salary in order to capture total compensation instead of just the base-salary.

The description field provided in the dataset from the ASA corresponded very poorly with that reported by the survey participants. (See the table below.) There was only 85.7% agreement between what was recorded in the database and that reported by respondents.

DESCRIPTION FROM ASA MEMBERSHIP LIST by SURVEY QUESTION 9 (RECODED)

		Current Survey Response (Q9)					
		Business and Industry	Federal Government	State or Local Government	Self Employed/Private Consultant	Other	Total
DESCRIPTION	Business and Industry	1189	11	7	23	21	1251
	Federal/National Government	34	385	4	0	5	428
	State, Provincial, Local Government	2	3	31	0	1	37
	Private Consultant/Self Employed	54	2	4	79	2	141
	Other	102	5	0	2	6	115
Total		1381	406	46	104	35	1972

Accuracy = 1690/1972 = 85.7 % (14.3% not in agreement)

V. ACKNOWLEDGEMENTS

The authors gratefully acknowledge the critical input provided by Keith Crank, ASA Assistant Director for Research and Graduate Education, Jai Choi, Chair of SPAIG Committee, and all members of the SPAIG Committee.

We also wish to thank the ASA members who responded to the survey. Without their participation, the survey could not have been conducted. Their valuable comments will surely improve future surveys.

APPENDIX A
2009 American Statistical Association Salary Survey
of Business, Industry, and Government Statisticians

Statistician Information

Please complete the following information about your background and current primary employment as a statistician. All information will remain strictly confidential and will only be reported as aggregated data.

For this study, a **Statistician** is defined as a person who is employed in business, industry, or government (not academia):

1. Has a university/college degree (Bachelors, Masters, PhD) in statistics, biostatistics, or mathematical statistics, OR has the equivalent of one year graduate course work in academic statistics (including Federal Government employees who meet the education requirements for a Mathematical Statistician),

AND

2. Currently uses statistical reasoning or performs statistical analyses (includes supervision of statisticians) as part of their job.

1. Based on the definition above, are you currently employed as a statistician?

1 = Yes

2 = No (or Not Sure) → Please explain:

If you answered “No”, STOP and please mail the survey.

2. Your highest educational degree completed.

1 = Bachelors degree

2 = Masters degree

3 = Doctorate

3. Your Gender.

1 = Male

2 = Female

4. First date you were ever employed full-time as a statistician.
(Could be at a different organization.)

Month

Year

«PIN»

5. Is your current position full-time or part-time?

1 = Full-time

2 = Part-time → If Part-time, please enter your percentage effort _____%

6. Does your current position include managerial responsibilities?

(Managerial responsibilities include budget and hiring responsibility, conducting performance appraisals, etc. A technical team leader is not considered to have managerial responsibility.)

1 = Yes

2 = No

7. State in which your current job is located (or based).

_____ State

8. Your current annual base salary (in dollars) as a business, industry, or government statistician: (Do not include bonuses, incentives, or other forms of monetary award.)

\$ _____ per year

9. Please circle the 1-digit code in the list below that best describes your current employer.

1 = Federal Government

2 = State or Local Government

3 = For-Profit Business or Industry

4 = Non-Profit Organization

5 = Self Employed/Private Consultant

6 = Other: _____

10. Please circle the 1-digit code in the list below that best describes your current job type or application area.

1 = Pharmaceuticals

2 = Other Medical/Health-Related

3 = General Consulting

4 = Other: _____

«PIN»

APPENDIX B
(PRINTED ON DEPARTMENTAL LETTERHEAD)

February 5, 2009

«FIRST» «MIDDLE» «LAST»
«COMPANY»
«ADDRESS1»
«ADDRESS2»
«CITY», «STATE» «ZIP5»

Dear Sir or Madam:

Your assistance is requested for a 2009 American Statistical Association (ASA) survey of statisticians in government, industry, and non-profit organizations. This research will update similar ASA surveys conducted in the past (see reports at <http://www.amstat.org/careers/salaryinformation.cfm>). Survey results will provide relevant statistician salary benchmarks to ASA members and will be very helpful in addressing the salary/career questions ASA receives from students, employers, and researchers.

You have been selected from ASA membership to be contacted for this survey. The questions are brief and primarily relate to your current employment situation. It should take only 3 or 4 minutes to complete. Because we are surveying only a sample of ASA members, your response is very important to an accurate representation of statistics as a career. For your convenience, you may either complete the survey on the enclosed form or, preferably, on our website. If you complete the survey on paper, please return it to Medical College of Georgia in the enclosed return envelope.

You may have already received an e-mail inviting your participation. If you did and completed the on-line questionnaire, please accept our thanks and apologies for contacting you again. If you did not get the e-mail invitation or if you choose to complete the survey on the survey's website instead of completing and mailing the paper questionnaire, please:

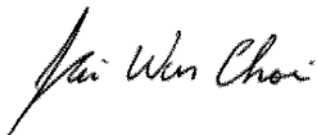
Go to: <http://www.surveymonkey.com/asa2009>
Enter this password: **SPAIG09**
Enter this PIN: «PIN»

Please note that your assigned password is case sensitive and your PIN is unique. **If you have any difficulty accessing the web survey, please contact Kelly Miller at the Medical College of Georgia, Biostatistics Consulting and Survey Center at (706) 721-3786 or kemiller@mcg.edu.**

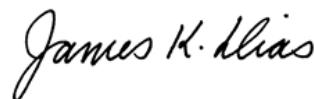
Your participation is voluntary; however we encourage you to make this special survey a priority. There will be no penalty or loss of benefits to which you are otherwise entitled should you refuse to answer any question or decide not to participate in the research. Strict security procedures are in place so that your information will be kept confidential. Neither your name nor the name of your firm will be associated with any information you provide. Published data will be summarized by type of organization and geographic region, as well as by academic degree and length of work experience. If you have any questions about the rights of research subjects, please contact the Medical College of Georgia, Biostatistics Consulting and Survey Center, James Dias, Center Director, (706) 721-0806 or jdias@mcg.edu.

Thank you very much for your cooperation.

Sincerely,



Jai Choi, Ph.D., Chair
Statistics Partnership of Academe,
Industry & Government (SPAIG) Committee
American Statistical Association



James Dias, Ph.D., Director
Biostatistics Consulting and Survey Center
Department of Biostatistics
Medical College of Georgia

APPENDIX C

Dear [FirstName] [LastName]:

Once again, the Statistical Partnerships among Academe, Industry, and Government (SPAIG) committee of the American Statistical Association (ASA) is conducting the biannual Salary Survey of the ASA members employed with Business, Industry, and Government (B/I/G). As in the past, the premise of this survey is that there is no salary information for this group of people or for a comparable group.

The past surveys were done in years 1999, 2003, 2005, and 2007 with results published in Amstat News and posted on SPAIG's website (<http://www.svsu.edu/orgs/spaig/>).

This year, SPAIG has contracted with the Medical College of Georgia, Biostatistics Consulting and Survey Center (MCG-BCSC) to conduct the survey. The ASA membership database that identifies people as working in the B/I/G section provided the frame for the survey. This research will update similar ASA surveys conducted in the past (see reports at <http://www.amstat.org/careers/salaryinformation.cfm>). Survey results will provide relevant statistician salary benchmarks to ASA members and will be very helpful in addressing the salary/career questions ASA receives from students, employers, and researchers.

You have been selected from the ASA membership to be contacted for this survey. The questions are brief and primarily relate to your current employment situation. It should take only 3 or 4 minutes to complete. Because we are surveying only a sample of ASA members, your response is very important to an accurate representation of statistics as a career.

If you choose to complete the on-line survey:

Click on: [SurveyLink]
Enter this password: SPAIG09
Enter this PIN: [CustomData]

Please note that the password is case sensitive and your PIN is unique. If you have any difficulty accessing the web survey, please contact Kelly Miller at the MCG-BCSC at (706) 721-3786 or kemiller@mcg.edu.

Your participation is voluntary; however we encourage you to make this special survey a priority. There will be no penalty or loss of benefits to which you are otherwise entitled should you refuse to answer any question or decide not to participate in the research. Strict security procedures are in place so that your information will be kept confidential. Neither your name nor the name of your company will be associated with any information you provide. Published data will be summarized by type of organization and geographic region, as well as by academic degree and length of work experience. If you have any questions about the rights of research subjects, please contact the MCG-BCSC, James Dias, Center Director, (706) 721-0806 or jdias@mcg.edu.

Please note: If you have already completed and mailed the survey sent by post or completed the on-line version, please accept our apologies. Just click on the link below if you want to be removed from our mailing list.

Thank you very much for your cooperation.

Sincerely,

Jai Choi, Ph.D., Chair
Statistics Partnership of Academe,
Industry & Government (SPAIG) Committee
American Statistical Association

James Dias, Ph.D., Director
Biostatistics Consulting and Survey Center
Department of Biostatistics
Medical College of Georgia

Click on the following link to be removed from our mailing list: [RemoveLink]

APPENDIX D

Dear [FirstName] [LastName]:

Second Request - Please Participate

Once again, the Statistical Partnerships among Academe, Industry, and Government (SPAIG) committee of the American Statistical Association (ASA) is conducting the biannual Salary Survey of the ASA members employed with Business, Industry, and Government (B/I/G). As in the past, the premise of this survey is that there is no salary information for this group of people or for a comparable group.

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This year, SPAIG has contracted with the Medical College of Georgia, Biostatistics Consulting and Survey Center (MCG-BCSC) to conduct the survey. The ASA membership database that identifies people as working in the B/I/G section provided the frame for the survey. This research will update similar ASA surveys conducted in the past (see reports at <http://www.amstat.org/careers/salaryinformation.cfm>). Survey results will provide relevant statistician salary benchmarks to ASA members and will be very helpful in addressing the salary/career questions ASA receives from students, employers, and researchers.

You have been selected from the ASA membership to be contacted for this survey. The questions are brief and primarily relate to your current employment situation. It should take only 3 or 4 minutes to complete. Because we are surveying only a sample of ASA members, your response is very important to an accurate representation of statistics as a career.

If you choose to complete the on-line survey:

Click on: [SurveyLink]
Enter this password: SPAIG09
Enter this PIN: [CustomData]

Please note that the password is case sensitive and your PIN is unique. If you have any difficulty accessing the web survey, please contact Kelly Miller at the MCG-BCSC at (706) 721-3786 or kemiller@mcg.edu.

Your participation is voluntary; however we encourage you to make this special survey a priority. There will be no penalty or loss of benefits to which you are otherwise entitled should you refuse to answer any question or decide not to participate in the research. Strict security procedures are in place so that your information will be kept confidential. Neither your name nor the name of your company will be associated with any information you provide. Published data will be summarized by type of organization and geographic region, as well as by academic degree and length of work experience. If you have any questions about the rights of research subjects, please contact the MCG-BCSC, James Dias, Center Director, (706) 721-0806 or jdias@mcg.edu.

Please note: If you have already completed and mailed the survey sent by post or completed the on-line version, please accept our apologies. Just click on the link below if you want to be removed from our mailing list.

Thank you very much for your cooperation.

Sincerely,

Jai Choi, Ph.D., Chair
Statistics Partnership of Academe,
Industry & Government (SPAIG) Committee
American Statistical Association

James Dias, Ph.D., Director
Biostatistics Consulting and Survey Center
Department of Biostatistics
Medical College of Georgia

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APPENDIX E – Descriptive Statistics

Entire Sample Responding (N = 1975)

Quantitative Variables	Not Missing		Missing		Total	
	N	Percent	N	Percent	N	Percent
Part-Time % Effort	86	4.4%	1889	95.6%	1975	100.0%
Salary (Annualized in Thousands)	1975	100.0%	0	.0%	1975	100.0%
Years Experience	1815	91.9%	160	8.1%	1975	100.0%

Descriptive Statistics for Quantitative Variables

			Statistic
Part-Time % Effort n = 86	Mean		57.08
	95% Confidence Interval for Mean	Lower Bound	52.80
		Upper Bound	61.36
	Median		60.00
	Std. Deviation		19.956
	Minimum		10
	Maximum		90
Salary (Annualized in Thousands) n = 1975	Mean		133.23
	95% Confidence Interval for Mean	Lower Bound	130.47
		Upper Bound	135.99
	Median		124.00
	Std. Deviation		62.490
	Minimum		0
	Maximum		1440
Years Experience n = 1815	Mean		18.858
	95% Confidence Interval for Mean	Lower Bound	18.311
		Upper Bound	19.404
	Median		17.700
	Std. Deviation		11.8745
	Minimum		0
	Maximum		72.7

Quantitative Variables	n	Percentiles				
		10	25	50	75	90
Part-Time % Effort	86	25.00	50.00	60.00	75.00	80.00
Salary (Annualized in Thousands)	1975	80.00	100.00	124.00	153.00	195.00
Years Experience	1815	4.100	9.100	17.700	27.700	34.500

Number Non-Missing and Missing for Categorical Variables

	Full- /Part- Time	Gender	Employer	Highest Degree	Geographic Region	Managerial Responsibility	Application Area or Type of Job	Years Experience
N	1968	1968	1970	1974	1966	1967	1969	1815
# Missing	7	7	5	1	9	8	6	160

Frequency Table for Categorical Variables

		Frequency	Percent
Full-/Part-Time	Full-time	1882	95.6
	Part-time	86	4.4
	Total responded	1968	100.0
	Missing	7	
	Total	1975	
Gender	Female	610	31.0
	Male	1358	69.0
	Total responded	1968	100.0
	Missing	7	
	Total	1975	
Employer	Federal Government	406	20.6
	State or Local Government	45	2.3
	For-Profit Business or Industry	1182	60.0
	Non-Profit Organization	199	10.1
	Self Employed or Private Consultant	103	5.2
	Other (please specify)	35	1.8
	Total responded	1970	100.0
	Missing	5	
	Total	1975	
Highest Degree	Bachelors	50	2.5
	Masters	818	41.4
	Doctorate	1106	56.0
	Total responded	1974	100.0
	Missing	1	
	Total	1975	

Frequency Table for Categorical Variables (cont.)

		Frequency	Percent
Geographic Region	South Atlantic	664	33.8
	Middle Atlantic	372	18.9
	East North Central	211	10.7
	Pacific	266	13.5
	New England	123	6.3
	West North Central	124	6.3
	Other	206	10.5
	Total responded	1966	100.0
	Missing	9	
	Total	1975	
Managerial Responsibility	No	1166	59.3
	Yes	801	40.7
	Total responded	1967	100.0
	Missing	8	
	Total	1975	
Years Experience	0-2	64	3.5
	3-5	167	9.2
	6-10	285	15.7
	11-15	281	15.5
	16-25	445	24.5
	26+	573	31.6
	Total responded	1815	100.0
	Missing	160	
	Total	1975	

Frequency Table for Categorical Variables (cont.)

		n	%
Application Area/ Job Type	Pharmaceuticals	647	32.9
	Other Medical/Health-Care Related	389	19.8
	General Consulting	233	11.8
	Surveys/Marketing	110	5.6
	Banking/Finance/Business	53	2.7
	Environment/Health	47	2.4
	Software	40	2.0
	Wildlife/Forestry/Agriculture	35	1.8
	High Tech/Internet Technology/WWW	31	1.6
	Military/Defense/Aerospace	31	1.6
	Natural Resources/Energy	26	1.3
	Engineering/Manufacturing	25	1.3
	Insurance	23	1.2
	Education	21	1.1
	Consumer Products/Goods	17	.9
	Economics	12	.6
	Telecommunications	10	.5
	Transportation	10	.5
	Other	209	10.6
	Total responded	1969	100.0
Missing	6		
Total	1975		

APPENDIX F

Salary (Annualized in Thousands)

		n	Percentiles				
			10	25	50	75	90
Total Sample		1975	80.0	100.0	124.0	153.0	195.0
Employer	Federal Government	406	88.0	104.0	125.0	145.0	160.0
	State or Local Government	45	56.0	70.0	80.0	100.0	124.0
	For-Profit Business or Industry	1182	87.0	103.0	126.0	159.0	200.0
	Non-Profit Organization	199	68.0	81.0	106.0	135.0	191.0
	Self Employed or Private Consultant	103	60.0	100.0	150.0	200.0	280.0
	Other (please specify)	35	73.0	90.0	120.0	140.0	160.0
Geographic Region	South Atlantic (DE, DC, GA, FL, MD, NC, SC, VA, WV)	664	86.0	105.0	127.0	153.0	177.0
	Middle Atlantic (NJ, NY, PA)	372	95.0	111.5	138.0	173.0	212.0
	East North Central (IL, IN, MI, OH, WI)	211	73.0	93.0	115.0	141.0	182.0
	Pacific (AK, CA, HI, OR, WA)	266	80.0	102.0	127.0	157.0	215.0
	New England (CT, MA, ME, NH, RI, VT)	123	85.0	103.0	130.0	175.0	225.0
	West North Central (IA, KS, MN, MO, ND, NE, SD)	124	73.0	84.0	109.5	130.5	160.0
	Other (States not listed above)	206	68.0	85.0	105.0	130.0	165.0
	Managerial Responsibility	No	1166	75.0	93.0	112.5	133.0
Yes		801	95.0	120.0	146.0	175.0	220.0
Gender	Female	610	75.0	93.0	113.0	140.0	167.0
	Male	1358	85.0	104.0	129.0	160.0	200.0
Highest Degree	Bachelors	50	60.5	71.0	110.0	140.0	162.5
	Masters	818	72.0	88.0	110.0	134.0	163.0
	Doctorate	1106	95.0	111.0	134.0	165.0	213.0

APPENDIX F (cont.)

Salary (Annualized in Thousands)

		n	Percentiles				
			10	25	50	75	90
Years Experience	0-2	64	55.0	62.0	75.0	91.0	98.0
	3-5	167	63.0	78.0	94.0	105.0	121.0
	6-10	285	78.0	90.0	105.0	123.0	138.0
	11-15	281	88.0	103.0	124.0	145.0	168.0
	16-25	445	91.0	110.0	130.0	161.0	208.0
	26+	573	99.0	120.0	145.0	175.0	225.0
Application Area or Type of Job	Pharmaceuticals	647	93.0	110.0	132.0	170.0	217.0
	Other Medical/Health-Related	389	74.0	88.0	115.0	140.0	171.0
	General Consulting	233	84.0	101.0	126.0	152.0	200.0
	Surveys/Marketing	110	75.0	104.0	126.5	150.0	180.0
	Other	590	76.0	95.0	120.0	150.0	175.0

APPENDIX G

Managerial Responsibility by Experience by Highest Degree

Salary (Annualized in Thousands)

Years Experience	Highest Degree ¹	n	Percentiles				
			10	25	50	75	90
No Managerial Responsibility							
0-5	Masters	94	54.0	62.0	75.0	84.0	98.0
	Doctorate	95	80.0	90.0	98.0	109.0	120.0
6-10	Masters	84	68.0	78.0	90.0	101.5	120.0
	Doctorate	112	87.0	100.0	112.0	125.5	135.0
11-15	Masters	71	80.0	92.0	104.0	116.0	136.0
	Doctorate	80	100.5	111.0	124.5	139.5	157.5
16-25	Masters	119	80.0	99.0	114.0	130.0	156.0
	Doctorate	114	94.0	115.0	130.0	149.0	180.0
26+	Masters	99	80.0	96.0	113.0	134.0	167.0
	Doctorate	181	100.0	117.0	137.0	161.0	210.0
Managerial Responsibility							
0-5	Masters	16		75.0	91.0	128.0	
	Doctorate	16		89.0	103.5	136.5	
6-10	Masters	37	80.0	87.0	108.0	120.0	135.0
	Doctorate	48	91.0	112.5	125.0	145.5	183.0
11-15	Masters	57	87.0	101.0	125.0	140.0	160.0
	Doctorate	67	105.0	129.0	152.0	170.0	202.0
16-25	Masters	83	97.0	116.0	138.0	165.0	193.0
	Doctorate	118	111.0	135.0	162.5	205.0	230.0
26+	Masters	92	105.0	123.0	139.5	162.5	200.0
	Doctorate	182	120.0	145.0	169.5	205.0	275.0

¹There were too few respondents with a Bachelor's degree to include in this table.

APPENDIX H
Bachelor's Highest Degree
Experience

Salary (Annualized in Thousands)

Years Experience	n	Percentiles		
		25	50	75
0 - 10	13	61	65	85
11 - 25	15	72	85	110
26+	19	126	140	155
Overall	47	71	110	140

APPENDIX I
Employer by Highest Degree

Salary (Annualized in Thousands)

Employer	Highest Degree	n	Percentiles				
			10	25	50	75	90
Federal Government	Bachelors	18		113	132	153	
	Masters	144	77	95	113	132	150
	Doctorate	244	95	108	130	152	163
State or Local Government	Bachelors	2					
	Masters	19		62	76	84	
	Doctorate	24	68	74	90	108	157
For-Profit Business or Industry	Bachelors	25	52	65	80	127	158
	Masters	514	80	95	115	138	169
	Doctorate	642	97	115	140	175	219
Non-Profit Organization	Bachelors	3					
	Masters	85	60	70	80	101	123
	Doctorate	111	88	105	128	170	204
Self Employed or Private Consultant	Bachelors	1					
	Masters	40	53	88	126	169	225
	Doctorate	62	96	120	160	250	300
Other	Bachelors	1					
	Masters	14		76	90	104	
	Doctorate	20	90	120	136	162	395

APPENDIX J - Employer by Application Area or Type of Job by Highest Degree

Salary (Annualized in Thousands)

Employer	Application Area or Type of Job	Highest Degree ¹	n	Percentiles				
				10	25	50	75	90
Federal Government	Pharmaceuticals	Masters	3					
		Doctorate	14		90.0	134.0	153.0	
	Other Medical/ Health-Related	Masters	39	76.0	91.0	105.0	124.0	141.0
		Doctorate	84	104.0	119.5	133.5	151.5	180.0
	General Consulting	Masters	17		109.0	127.0	134.0	
		Doctorate	33	94.0	104.0	119.0	133.0	153.0
	Surveys/ Marketing	Masters	34	73.0	96.0	113.0	137.0	153.0
		Doctorate	17		137.0	150.0	159.0	
	Other	Masters	48	78.0	100.0	120.0	134.0	153.0
		Doctorate	96	88.0	101.5	126.5	152.5	163.0
For-Profit Business or Industry	Pharmaceuticals	Masters	210	86.5	101.0	120.0	150.0	174.5
		Doctorate	360	100.5	120.0	144.5	190.0	226.0
	Other Medical/ Health-Related	Masters	64	75.0	88.0	104.5	130.0	140.0
		Doctorate	58	98.0	112.0	138.5	170.0	210.0
	General Consulting	Masters	67	75.0	90.0	121.0	142.0	175.0
		Doctorate	51	95.0	110.0	134.0	170.0	250.0
	Surveys/ Marketing	Masters	25	71.0	85.0	113.0	138.0	200.0
		Doctorate	16		116.0	131.0	154.5	
	Other	Masters	147	74.0	91.0	110.0	130.0	161.0
		Doctorate	157	91.0	106.0	130.0	155.0	180.0
Other (State/Local Government, Non-profit Organization, Self Employed, Private Consultant, Other Employers not listed above)	Pharmaceuticals	Masters	20	59.5	88.5	121.0	166.0	187.5
		Doctorate	31	100.0	120.0	140.0	250.0	350.0
	Other Medical/ Health-Related	Masters	72	58.0	69.0	80.0	94.0	111.0
		Doctorate	68	81.0	92.0	119.0	152.5	220.0
	General Consulting	Masters	17		90.0	120.0	130.0	
		Doctorate	43	95.0	113.0	140.0	192.0	250.0
	Surveys/ Marketing	Masters	5					
		Doctorate	6					
	Other	Masters	43	54.0	64.0	82.0	110.0	150.0
		Doctorate	69	76.0	100.0	132.0	170.0	247.0

¹There were too few respondents with a Bachelor's degree to include in this table.