

## Professional Accreditation for Statisticians

Mary Batcher, Ernst & Young LLP, 1225 Connecticut Ave. NW, Washington DC

### Key Words: Accreditation

Professional accreditation was the primary issue addressed by the ASA task force called *Recognition of the Professionalism of those in Business Practice*. The task force members came from academia, business, and government. They were Mary Batcher, Ernst & Young; Judy-Anne Chapman, National Cancer Institute of Canada Clinical Trials Group and chair of the Accreditation Subcommittee at the Statistical Society of Canada; Roger Hoerl, General Electric; Phil Kott, National Agriculture Statistical Service; and Ron Wasserstein, Washburn University.

Formal recognition of statistical practice is now offered by three other statistical societies, chartering by the Royal Statistical Society (RSS), and accreditation by the Statistical Society of Canada (SSC), and the Statistical Society of Australia, Inc. (SSAI). Although there are differences in the structure and complexity of the different societies' programs, their accreditation decisions are based on a combination of professional and academic credentials, applicant's body of work and involvement in the profession, and recommendations from experienced statisticians. They all offer two levels of accreditation, a first level for less experienced statisticians and a second level for more senior statisticians. The programs can be reviewed by following the related links on the ASA website, [www.amstat.org](http://www.amstat.org).

Long time ASA members will recall that ASA explored certification several years ago but decided at that time not to offer a certification program. However, with the recent successful experience of the other statistical associations and some increasing interest from members, ASA is exploring whether an accreditation program would be a useful service to offer its members.

The task force took as its major tasks to learn from the experience of other associations and to assess the interest of the membership. Member interest and attitudes were assessed through focus groups, a question on the ASA member survey, roundtables at the ENAR meetings and the JSM, and an open meeting at the JSM. Focus

groups were held in Washington DC, Philadelphia, and Seattle. Input from the focus groups was used to write a survey question for the ASA survey of long time members.

### Focus Groups

While there were some differences among the three groups, their comments were remarkably consistent across groups. The first two questions asked were about additional services that ASA might offer and obstacles to recognition of the professionalism of statisticians. Those were followed by a series of questions about accreditation.

### Demographics

The focus groups included 14 women and 21 men, with a range of experience and membership in the ASA from 3 months to 37 years. Experience and membership in the ASA were highly parallel, with generally no more than a two-year difference between joining the ASA and becoming a statistician. Recruited for participation in each focus group were a few members with a limited amount of time in ASA membership. Also, there were a small number of practicing statisticians who had degrees in fields other than statistics. The groups asked to participate included a mixture of university, private and government practitioners, with a mixture of those working with more than ten other statisticians and those working alone or in smaller groups.

### Results

#### *Services that ASA could offer to enhance the status of statisticians in the workplace*

The focus group participants identified general areas where ASA could provide beneficial services. They identified a need for continuing education courses and workshops offered locally for both statisticians and non-statisticians. They recognized the presence of Learn STAT but expressed a need for broader, more interactive continuing education.

They felt it would be beneficial for ASA to take on a public outreach campaign beyond what ASA currently provides to the public at large,

with an emphasis on media, policy makers, researchers and students about the unique role of statisticians, including their abilities and talents in service to society. One suggestion was for an ASA Rapid Response Team that could respond to societal events where statistics are needed. Another was for ASA to develop a list of statisticians in various subspecialties who have agreed to address inquiries by the public. A related suggestion was for a national award in statistics like the Nobel Prize presented each year to increase visibility as well as the presentation of rewards in specialty areas.

A desire for ASA to support mentoring and networking among its members was also mentioned as a way that ASA could aid its members.

### ***Obstacles to Recognition***

The focus groups identified a lack of understanding on the part of both researchers in other fields and the general public about the role of statisticians as a barrier to recognition of the profession. They also cited the fact that statisticians often work in teams with people from other disciplines and the statistical contribution is sometimes not recognized. Interestingly, all of the focus groups placed some of the responsibility for the lack of recognition on a lack of “soft skills” among statisticians, referring to a general deficiency of verbal, written, and interpersonal skills. This was expanded by some of the groups to a general inability of statisticians to market themselves and their contributions.

### ***Benefits of Accreditation***

The focus group participants suggested that ASA should obtain data from the other statistical societies and from other professions that accredit to assess the impact on individuals and the profession. They felt it would be helpful to look at the benefits and accountability issues encountered for the organizations that certify financial planners, public accountants, etc. In addition, ASA should obtain information from statistical consumers and non-statisticians who hire statisticians to obtain their thoughts on accreditation.

The focus groups noted that accreditation may be most beneficial to younger practitioners, the lone

operator, consultant in the private sector, or to those with only the Master's degree. It would also be helpful to those without statistical backgrounds who are hiring and for the general public. They also thought that accreditation may be helpful internationally.

### ***Caveats to Accreditation***

Participants acknowledged the difficulty of recruitment into the field and felt that the effect of an accreditation program on recruitment should be considered. They asked the question, "Will accreditation limit or enhance the field?"

They also expressed concern about the possible creation of a class system between accredited statisticians and those who are not accredited. A related concern was that some qualified statisticians might not be able to obtain accreditation due to cost or other factors.

### ***What an Accreditation Program Should Include***

If the ASA proceeds with an accreditation program they should ensure that it is a *meaningful* program and not a rubber stamp. Balance is needed between too stringent and too easy. There should be a variety of paths to qualification based on combinations of approaches and characteristics such as qualifying through testing for people who do not hold degrees in statistics, qualifying through degrees including degrees in related quantitative fields, experience, continuing education, publishing, evaluation of statistical techniques, references etc. with no single set of requirements. In short, through “*demonstrated competence in the practice of the discipline.*” Accreditation should include an ethical component.

Other desirable characteristics identified by the focus groups were that it should be a two tiered program that recognizes different levels. It should include a core accreditation for basic knowledge that all statisticians should have and additional accreditation for subspecialties. Universities/colleges should have their academic programs accredited by the ASA as providing the first level of certification granted automatically upon successful degree completion.

Focus group participants felt that an accreditation program should provide a

grandfather provision for those with certain levels of experience and knowledge. This was very strongly emphasized as the key to the success of the endeavor by creating a critical mass of accredited statisticians.

They stressed that fees should be low, no more than \$50 to \$300 initially but could be raised if accreditation were to be demonstrated to be beneficial.

Recertification should be required every 5 to 10 years, based on continuing education or evidence of professional achievement such as publications, references, etc.

The success of any accreditation program will require aggressive marketing. In addition, ASA should think carefully about any legal and liability issues.

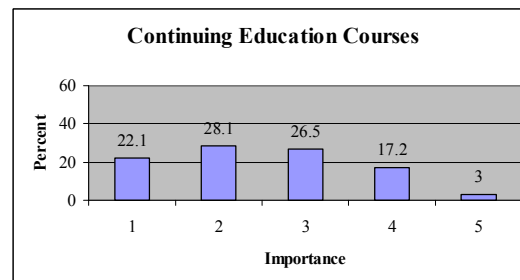
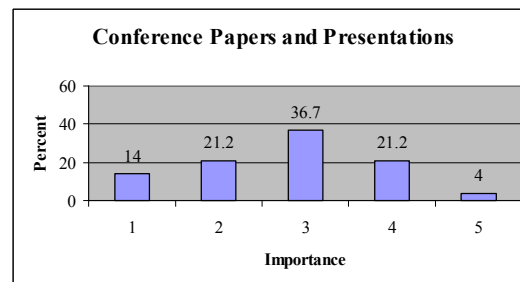
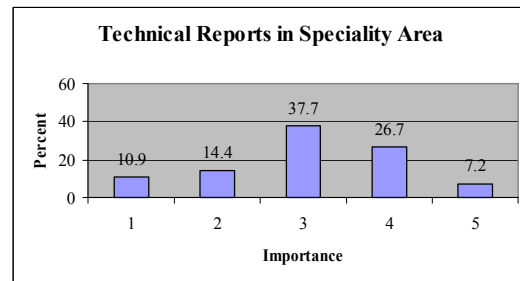
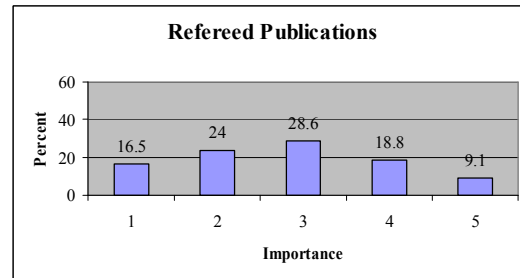
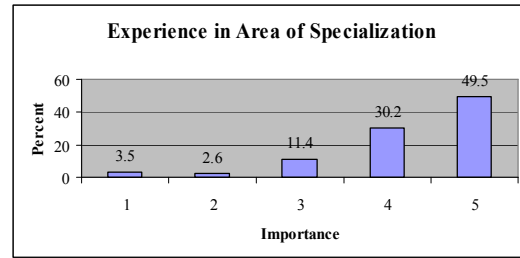
### Survey Results

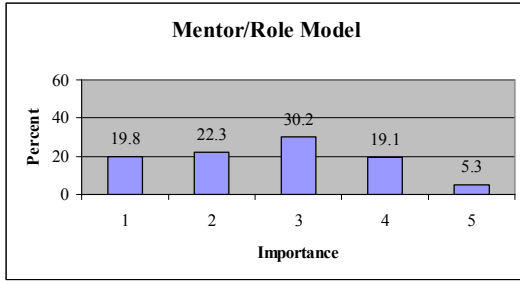
The multi-part survey question for the long term members listed components of an accreditation program as identified by the focus groups and asked respondents to choose all that they felt should be included in an accreditation program, as well as providing an option to add any not listed. The question was:

**If the ASA were to award a professional statistician certificate, what criteria are important to check before the award? (Not At All Important To Very Important)**

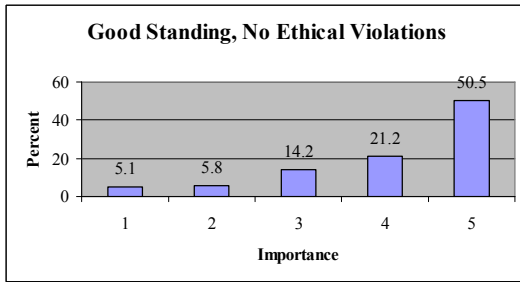
- Experience working within area of specialization
- Publications in refereed journals
- Technical reports within area of specialization
- Conference papers and presentations
- ASA continuing education courses
- Being a mentor/role model to others
- Good standing in ASA, no ethical violations
- Anything else? \_\_\_\_\_

The survey results are summarized by criterion below.



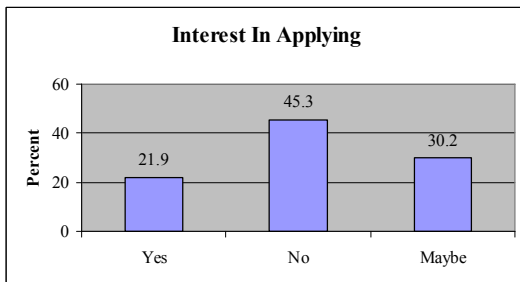


structure have been presented to the ASA Committee on Committees which will formalize its existence.



Experience working in the area of specialization, the authoring of technical reports, and good standing in ASA with no ethical violations were the criteria most often selected as very important.

The criterion question was followed by a question about the respondents' interest in personally applying for accreditation. As shown in the frequency chart, slightly fewer than half were not, with about 22 percent interesting in seeking accreditation and 30 percent who might be interested.



### Recommendation and Next Steps

Given the interest in seeking accreditation by a substantial number of ASA members, the Task Force recommendation to the ASA Board was that the Board form a Committee to develop the structure an ASA Accreditation program might take, its benefits and risks, and present that to the Board for a vote. This is an extensive task, expected to take up to three years. The Board approved the formation of an ASA Committee. The approval and a committee charge and