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# Professional Societies

Most professions have professional societies that individuals can participate in to forward a particular profession's interests. Statisticians have a number of societies for this purpose, and statisticians are very often members of more than one. The purpose of this section is to discuss what these statistical societies do to help you achieve your career goals.

## American Statistical Association

The largest statistical society is the American Statistical Association (ASA) with close to 20,000 members from around the world. The ASA was founded in 1839 making it the second oldest continuously operated professional society in the US. Its website (<http://www.amstat.org>) describes the society's purpose as

### **ASA: Promoting the Practice and Profession of Statistics**

The American Statistical Association is the world's largest community of statisticians, the "Big Tent for Statistics." The ASA supports excellence in the development, application, and dissemination of statistical science through meetings, publications, membership services, education, accreditation, and advocacy. Our members serve in industry, government, and academia in more than 90 countries, advancing research and promoting sound statistical practice to inform public policy and improve human welfare.

I recommend all statisticians become a member of at least this society! Its most basic benefit to you is that you can list your membership on your résumé (or CV). This shows potential employers that you are serious about becoming a statistician. Students receive a large discount off of their annual membership fee.

## *Structure*

The ASA has a large organizational structure to achieve its large purpose and satisfy the diverse interests of its members:

- Sections - This is a group that works toward forwarding a common interest among members. The oldest and largest is the Biometrics section which is focused on biological applications of statistics. For example, from its charter:

The objective of the Biometrics Section is to serve Association members with special interests in:

1. The development and application of biostatistical and biomathematical methods.
2. The formulation of biomathematical models, whether deterministic or stochastic, to describe and explain underlying mechanisms and modes of action of fundamental processes.
3. The interpretation of quantitative data in the biological sciences, including agriculture, biology, health, medicine, and related fields.

As areas within Biometrics has grown, new sections have been formed that are more specialized in it. For example, Sections include

- Biopharmaceutical
- Healthy Policy Statistics
- Medical Devices and Diagnostics
- Mental Health Statistics
- Statistics in Epidemiology
- Statistics in Genomics and Genetics

Overall, there are more than 25 different sections in the ASA. Other sections that are popular among students include:

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- Bayesian Statistical Science
  - Statistical Computing
  - Statistics and Data Science Education
  - Statistics in Sports

Some sections are more active than others. Common activities include sponsoring conferences, holding sessions on specific topics at the Joint Statistical Meetings (more on this conference shortly), networking opportunities, giving continuing education courses, and providing scholarships and conference travel support for students.

Individuals are often members of more than one section, but there is no requirement to be a member of any section. There is a fee to become a member, but the first year is often free for new members and the fee is deeply discounted for students.

Additional information:

- Officers (e.g., section chair, program chair, secretary/treasurer, ...) are elected from its members
  - Special interest groups are also formed as a trial to determine if there is an interest in forming a new section.
  - Each section has a “section digest” listserv to facilitate communication among its members.
- Chapters - This is a group that brings together individuals from a common geographical region in the United States. These regions may be as large as a state or as small as a particular city. For example, the Washington Statistical Society is the oldest and largest chapter, and it represents statisticians in the Washington, DC area. This chapter has its own frequent meetings, publishes a newsletter, and serves as an aggregate source for seminars/meetings around the area that are hosted by universities, government agencies, and corporations. Awards and scholarships are presented by the chapter

as well. Smaller chapters are not as active, including the Nebraska chapter. Currently, the chapter has two meetings per year with one of these meetings corresponding to a continuing education course.

Officers of chapters are elected from its members.

- Committees - These are groups for governance, awards, liaisons with other fields, and professional issues. For example, committees that I have recently been involved with include
  - I served a three-year term as a member of the Current Index to Statistics Management Committee.
  - I have submitted continuing education course proposals to the Advisory Committee on Continuing Education (courses sponsored by the Biometrics Section)
  - I was made a Fellow of the American Statistical Association by the Committee on Fellows

Getting involved with a committee (after graduating!) can help you obtain professional opportunities.

The ASA has an elected Board of Directors, which includes a President who serves a one-year term. These elected members have other jobs, so these are essentially volunteers. The day-to-day operation of the ASA is performed by its paid staff at its offices in Alexandria, VA. This staff includes its Executive Director, which is the top staff leadership post.

### *Members only access*

The ASA provides a web-portal from their home page for members only access to various items.

- Journals - Overall, the ASA with its Taylor & Francis publishing company partner publishes the largest number of statistics journals as compared to any other society or publishing

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company. Most of these journals are available online with a membership, although this is not necessarily as important for those in academia due to library access to these same journals. We will discuss journals in more detail later in the semester.

- *AMSTAT News* - In addition to its online version, members also receive a paper version of this membership magazine which is published monthly. This publication provides information on topics of current interest to statisticians, job postings, and conference announcements. For example, there have been recent articles about the p-value controversy and how statistics fits into data science. There are many articles of interest to students in it. For example, I was asked to write an article on “How to get the most out of the Joint Statistical Meetings” for first-time attendees a few years ago. This article has been re-published a number of times since then with my updates.
- *Significance* - In addition to its online version, members also receive a paper version of this magazine which is jointly published by the ASA and Royal Statistical Society. This quarterly publication provides examples of applications of statistics without a lot of the technical detail. It is an ideal publication for those who are new to statistics! Student members also receive an online subscription to *Chance* which has a similar purpose.
- Membership directory - This can be useful to determine contact information for specific individuals. For example, I used this as a student to inquire about internship opportunities.
- ASA JobWeb - This is a primary place to learn about job opportunities for industry and academia. Most of these postings are for jobs in the US, but there are a significant number of job postings from around the world (mostly in academics). These

same postings usually appear in AMSTAT News as well, but without the time delay that a monthly paper publication has.

### *Student resources*

The Graduate link at <https://www.amstat.org/asa/education/home.aspx/index.cfm> provides a number of useful resources for students. Some of these, like internships, we will discuss later in the semester. For now, specific items to take note of are

- Awards and scholarships - <https://www.amstat.org/ASA/Your-Career/Awards-and-Recognition.aspx>
- STATtr@k - <http://stattrak.amstat.org>; this is a useful website that contains tips about graduate school and becoming a statistician
- ASA Community for Young Professionals Group - A listserv available through <http://community.amstat.org/communities> for members

## **International Biometric Society and the International Statistical Institute**

The other statistical society that I most often see statisticians members of is the International Biometric Society (IBS). This society has an interesting connection to the International Statistical Institute (ISI), so this is why they both are part of the name of this section! Specifically, the ISI was formed in London in 1885 and had been focused on government statistics. After World War II, there was a movement to broaden its focus and adopt a new constitution. In 1947, some members were disappointed with the exclusion of biometrics at the ISI's conference. This led to formation of the IBS that year with Ronald Fisher as its first president. Interestingly, the ASA was also forming its Biometrics Section at

this time and started to publish the journal *Biometrics*, usually considered one of the five “first-tier” journals now. The IBS took over publication of this journal in 1949.

A nice account regarding the formation of IBS is available in Billard (*Biometrics*, 2014, p. 259-265). For the ISI, information regarding its formation is available at <http://www.isi-web.org/index.php/about-isi/what-is-isi/history>.

## *IBS*

- <http://www.biometricsociety.org>
- Purpose from website:

The International Biometric Society is an international society promoting the development and application of statistical and mathematical theory and methods in the biosciences, including agriculture, biomedical science and public health, ecology, environmental sciences, forestry, and allied disciplines.

- Approximately 6,000 members with approximately 75% of them outside of the US and Canada
- Members are automatically placed into regions of membership. For the US and Canada, 104° west longitude (roughly western border of Nebraska) is the dividing line between the Eastern North American Region (ENAR; <http://www.enar.org>) and the Western North American Region (WNAR; <http://www.wnar.org>). ENAR by far has the most members of any region with over 1,300. WNAR has only 191 members. The ENAR community is quite active with its support of a large annual conference, committees, and a webinar series.
- Publications in addition to *Biometrics*:

- *Biometric Bulletin* is the quarterly membership magazine; job postings are included here but a much smaller amount than in *AMSTAT News*
- *Biometrical Journal* published by Austro-Swiss and German regions
- *Journal of Agricultural, Biological and Environmental Statistics* (JABES) published jointly with the ASA
- Main office is located in Washington, DC
- Students receive a large discount off of their annual membership fee; a membership application is available at <http://www.enar.org/join/index.cfm> and dues are paid based on the calendar year

## *ISI*

- <http://www.isi-web.org>
- Purpose from website:

The ISI Mission is to promote the understanding, development and good practice of statistics worldwide

Overall, the ISI's scope is similar to the ASA but without the biometrics aspect. Because of its historical focus on government statistics, the ISI has a larger focus on this area relative to others.

- Approximately 4,500 members
- Members may join an affiliated association with their membership. These associations are
  - Bernoulli Society (BS)
  - International Association for Official Statistics (IAOS)
  - International Association for Statistical Computing (IASC)



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- International Association for Statistical Education (IASE)
  - International Association of Survey Statisticians (IASS)
  - International Society for Business and Industrial Statistics (ISBIS)
  - The International Environmetrics Society (TIES)

Most of these associations have their own publications. For example, IASC publishes *Computational Statistics and Data Analysis* and IASE publishes *Statistics Education Research Journal*.

- Additional publications from the ISI are
  - *International Statistical Review*
  - *Stat*
  - Its *ISI Bulletin* membership magazine is no longer published. Some associations now publish their own.
- Main office is located in the Netherlands
- Members are either known as being “elected” or “regular”. Elected members are those who are established in their careers, and it is obtained through a nomination and review process. Regular members are for anyone else and provide a way for new student members. Discounted membership fees are available for students.

## Other Statistical Societies

- Institute of Mathematical Statistics (IMS; <http://imstat.org>): This society has traditionally focused more on the mathematical theory rather than the applications of statistics. It publishes a number of journals, including the first-tier journal *Annals of Statistics* and the *Annals of Applied Statistics*, where the latter journal is still fairly new and represents an

attempt to broaden the IMS focus. There are approximately 3,600 members with student membership being free! This free student membership somewhat inflates the overall membership with their being approximately 2,600 paid members. IMS members can become Fellows, similar to the ASA. Eight issues of the *IMS Bulletin* are published each year as their membership magazine. Overall, I have found this magazine to contain useful information like *AMSTAT News*.

- Royal Statistical Society (RSS; <http://www.rss.org.uk>): The RSS was founded in 1834. This is the second largest statistical society in the world with approximately 7,000 members, but its focus is on the United Kingdom. The RSS publishes a few journals, including the first-tier journal *Journal of the Royal Statistical Society, Series B*.
- Statistical Society of Canada (SSC; <http://www.ssc.ca>)
- International Indian Statistical Association (IISA; <http://intindstat.org>)
- International Chinese Statistical Association (ICSA; <http://www.icsa.org>)
- Statistics Division of the American Society for Quality (<http://asq.org/statistics>): Their Ellis R. Ott Scholarship was awarded to Michelle Quinlan (UNL PhD graduate) twice and to myself once when I was a student. See <http://asq.org/statistics/about/awards-statistics.html> for more information regarding it.
- International Society for Bayesian Analysis (ISBA; <https://bayesian.org>)
- There are also software user groups. SAS user group information is available at [https://www.sas.com/en\\_us/connect/user-groups.html](https://www.sas.com/en_us/connect/user-groups.html) and R user group information

is available at <http://blog.revolutionanalytics.com/local-r-groups.html>.

## Non-Statistical Societies

Because statisticians often consult with individuals in other disciplines, statisticians sometimes join non-statistical societies as well.