



Institute of Mathematical Statistics (IMS)

By Elyse Gustafson¹ and Edsel A. Peña²

Keywords: awards, fellowships, founding, lectures, meetings, outreach, publications

Abstract: This article is about the formation, governance, membership, awards and fellowship, sponsored lectures, publications, and various activities of the premier organization of mathematical statisticians and probabilists in the world – The Institute of Mathematical Statistics (IMS).

1 Founding of IMS and its Mission

The Institute of Mathematical Statistics, hereon referred to as the IMS or the Institute, is a nonprofit organization and was formed on September 12, 1935, at Ann Arbor, Michigan. On its founding, its officers were H. L. Rietz as President; W. A. Shewhart as Vice-President; and A. T. Craig as Secretary-Treasurer. Prior to its founding, there was a feeling that the theory of statistics would be advanced in the United States by the formation of an organization composed of individuals especially interested in the mathematical aspects of the field of statistics. As such, the IMS mission is that of fostering the development and dissemination of the theory and applications of statistics and probability.

The official journal of the IMS during its founding was the *The Annals of Mathematical Statistics*, hereon referred to as the *Annals*. The founding of this journal actually preceded the formation of the IMS, and the existence of this journal was instrumental in the founding of the IMS. Professor Stephen Stigler's article entitled *History of Statistics*^[1] chronicled some of the events during this period pertinent to the *Annals* and the founding of the IMS. In 1930, mathematics Professor Harry C. Carver of the University of Michigan founded the *The Annals of Mathematical Statistics*, loosely under the aegis of the American Statistical Association (ASA) (see **The American Statistical Association**). The ASA provided a modest financial support for this journal. On the inception of the *Annals*, there was a recognition that the ASA needed to include the increasingly complex mathematical techniques that were then being introduced. Professor Willford I. King of New York University, who was then the ASA Secretary-Treasurer and its future President, wrote in the preface of the first issue of the *Annals* that^[2]:

For some time past, however, it has been evident that the membership of our organization is tending to become divided into two groups – those familiar with advanced mathematics, and those who have not devoted themselves to this field. The mathematicians are, of course, interested in articles of a type which are not intelligible to the non-mathematical readers of our Journal.

¹Institute of Mathematical Statistics, Shaker Heights, OH, USA

²University of South Carolina, Columbia, SC, USA



The financial support provided by the ASA for the *Annals* was, however, short-lived. In December 1933, Professor King led the move to strip the *Annals* of the meager ASA support, stating that “members, most of whom are not specialists in mathematics, and hence find the articles in the *Annals* not particularly adapted to their needs”^[3]. To prevent the demise of the *Annals*, its editor, Professor Carver, took over the *Annals* in January 1934 at his own expense and maintained it without institutional base or support.

According to Stigler^[1], in October 1934, Professor Carver came up with the idea of an association of mathematical statisticians as a base for the *Annals* and approached the ASA to see if this could be done within the ASA. However, this plan did not work out, and this was the impetus for the meeting in Ann Arbor that led to the official founding of the IMS, with the *The Annals of Mathematical Statistics* as its official journal. In 1938, the IMS took over the full financial responsibility for the *Annals* from Professor Carver. Also in 1938, Professor Samuel S. Wilks succeeded Professor Carver as Editor of the *Annals* and appointed a stellar editorial board consisting of luminaries such as Ronald Fisher, Jerzy Neyman, Harald Cramer, Harold Hotelling, Egon Pearson, Georges Darmon, Allen Craig, W. Edwards Deming, Richard von Mises, Henry Rietz, and Walter Shewhart. Professor Wilks edited the *Annals* for a dozen years and transformed it into the most influential statistics journal in the world.

2 Governance

The IMS is governed by its Constitution and its By-Laws. These documents could be found in the hyperlink *IMS Constitution and By-Laws*, which are in the **IMS Handbook**, with this handbook accessible via the hyperlink *IMS Handbook*. Aside from the by-laws and constitution, this handbook contains the rules and responsibilities of the officers and the council, various committees and their responsibilities, and descriptions of activities of the IMS and those joint with other societies and organizations.

The day-to-day operation of the IMS is managed by the IMS Executive Director, who reports to the IMS Executive Committee. The Executive Committee is composed of the President-Elect, President, Past President, Executive Secretary, Treasurer, and Program Secretary. The Executive Committee is chaired by the President. This committee has the following responsibilities:

- Conducts all the affairs of the Institute between Council Meetings, following the general policies established by the Council;
- Meets in person, as needed, and conducts business electronically throughout the year;
- Attends all Council Meetings; and
- May create temporary committees with assigned tasks coming within the scope and purposes of the Institute.

Aside from the Executive Committee, the IMS has a Council. This is composed of members of the Executive Committee, IMS Journal Editors, IMS Managing Editor, and fifteen IMS Elected Council Members each serving for 3 years. The responsibility of the IMS Council is stated in the Handbook as: “In furtherance of the purposes of the Institute, the Council shall determine the policies and supervise the affairs of the Institute in accordance with the Constitution and with any By-Laws the Institute may adopt.” A list of current officers, editors, and council members can be found in *Officers, Editors, and Council*.

There are also several standing committees that are charged with their respective responsibilities. A list of these committees together with their responsibilities could be found in the hyperlink *IMS Committees*. Current members of standing committees can be found in *Committee Members*.



3 Membership

IMS has several types of members. Most IMS members are **Regular** members. A member who is not categorized as a regular member could belong to the following categories.

1. **Life Membership:** available to any IMS member at specified rates depending on age. For members aged 50 or older the dues rate is fifteen times the annual regular membership dues. For members younger than 50 years the dues rate is fifteen times the annual regular membership dues plus an amount equal to the annual regular membership dues for each year below age 50.
2. **Retired Life Membership:** available for those 65 years or older.
3. **New Graduates:** available to those who have graduated (any level, undergraduate through doctorate) in the last 2 years. The first year out of school new graduate dues will be one-third of the regular dues rate, the second year out will be two-thirds. The third year, the new graduate will become a regular individual member.
4. **Reduced Country Membership:** available to permanent residents of countries designated by the IMS Council. An updated list of countries in which reduced IMS individual membership dues may be paid can be found at *Reduced Country Membership*.
5. **Retired Membership:** available to individuals who have been IMS members for the preceding 10 years and are retired from gainful employment.
6. **Student Membership:** available to full-time students. Additional journal subscriptions may be purchased at the student subscription price. Evidence of full-time student status must be provided each year. Student memberships are ordinarily available for a maximum of 4 years.

Refer to the hyperlink *IMS Membership* for more information regarding membership in the Institute. As of the writing of this article, the IMS has approximately 3600 members all over the world. IMS membership has many benefits. Such benefits include:

- Free electronic access to past issues of all our journals.
- Discounts at our sponsored meetings. The IMS sponsors a series of meetings: an Annual Meeting (usually held during the summer), regional meetings, and special topics meetings. Many of these are joint meetings with other societies.
- Reduced membership rates for the *Bernoulli Society* and *International Statistical Institute*. For more information see IMS/BS and ISI/BS/IMS joint memberships below.
- Reduced subscription rates to our journals and cosponsored journals. IMS journals are world leaders in their fields for research and review articles.
- Reduced rates on other publications and journals.
- Reduced rates for designated countries (see item 4 on types of memberships).

The IMS has also partnered with several societies in order to offer IMS members discounts when joining or renewing with more than one society or organization. These partner organizations are:

1. **Bernoulli Society (BS):** IMS members save 25% off their IMS and their BS dues by joining or renewing with both organizations at the same time. BS membership includes free electronic access to the *Bernoulli Journal* and the *Bernoulli News*.
2. **Indian Society for Probability and Statistics (ISPS):** when IMS members join or renew with ISPS at the same time, they save 25%+ off their ISPS dues. ISPS holds annual conferences and runs the flagship journal, <https://www.springer.com/statistics/journal/41096> *The Journal of the Indian Society for Probability and Statistics*.
3. **INFORMS/Applied Probability Society (INFORMS/APS):** IMS members may join or renew INFORMS/APS for just \$10.



4. **International Chinese Statistical Association (ICSA):** IMS members may join or renew their ICSA membership at the same time they renew their IMS dues at a saving of 25% off their ICSA dues.
5. **International Society for Bayesian Analysis (ISBA):** IMS members may join or renew their ISBA membership at the same time they renew their IMS dues at a saving of 25% off their ISBA dues.
6. **International Statistical Institute/Bernoulli Society (ISI/BS):** IMS members save 25% off their IMS and ISI/BS dues by joining/renewing both organizations at the same time. To join/renew with ISI/Bernoulli Society, please visit the hyperlink *Join or Renew ISI/Bernoulli*.
7. **New England Statistical Society (NESS):** IMS members may join or renew their NESS membership at the same time they renew their IMS dues at a saving of 25%+ off their NESS dues.

4 IMS Awards and Fellowship

4.1 Awards

To enhance professional development and to recognize the achievements of IMS members, the Institute has several awards that are given annually. These are:

- **Carver Medal:** The Carver Medal was created by the IMS in honor of Harry C. Carver, Founding Editor of the *Annals of Mathematical Statistics* and one of the founders of the IMS. The medal is for exceptional service specifically to the IMS and is open to any member of the IMS who has not previously been elected President. Not more than one award shall be made each year.
- **IMS Hannan Graduate Student Travel Award:** The purpose of the IMS Hannan Graduate Student Travel Award is to fund travel and registration to attend and possibly present a paper or a poster at an IMS sponsored or co-sponsored meeting. Presentation of a paper/poster is encouraged, but not required. The travel awards are available to IMS members who are graduate students (seeking a Masters or Ph.D. degree) studying some area of statistical science or probability who have not yet received a PhD degree.
- **IMS New Researcher Travel Award:** The purpose of the IMS New Researcher Travel Award is to fund travel and possibly other expenses to present a paper or a poster at an IMS sponsored or co-sponsored meeting for those who otherwise would not be able to attend the meeting. The travel awards are available to IMS members who are New Researchers. This means any IMS member who was awarded a PhD within the 5 years immediately preceding the year of the application deadline or who has or will receive her/his PhD in the same year as the application deadline.
- **Tweedie New Researcher Award:** Richard Lewis Tweedie played a significant role throughout his professional career in mentoring young colleagues at work and through professional society activities. With funds donated by his friends and family, IMS is able to provide this award which provides funds for travel to present the "Tweedie New Researcher Invited Lecture" at the IMS New Researchers Conference.

A list of recipients for these awards can be found in *IMS Awardees*, including recipients of the IMS Laha Travel Award, which was in existence from 2002 to 2013.

4.2 Fellowship

One of the major recognition that the IMS bestows to its deserving members is election to an IMS fellowship. Candidates for IMS fellowship shall have demonstrated distinction in research in statistics or



probability, by publication of independent work of merit. This qualification may be partly or wholly waived in the case of a candidate of well-established leadership whose contributions to the field of statistics or probability other than original research shall be judged of equal value; or a candidate of well-established leadership in the application of statistics or probability, whose work has contributed greatly to the utility of and the appreciation of these areas. A running average of between 10 to 25 new fellows are elected each year with the Committee on Fellows charged with vetting nominations and recommending to the Council members that should be awarded IMS fellowship. For more information about the IMS Fellowship and to see a list of honored IMS Fellows, go to the hyperlink *IMS Fellowship and Honored Fellows*.

5 IMS Sponsored Lectureships

The Institute also sponsors special lectures which are given by distinguished scientists chosen by the Committee on Special Lectures, with approval by the Council. These special lectures are:

1. **Medallion Lectures:** Each year the Committee on Special Lectures invites eight individuals to deliver Medallion Lectures in IMS sponsored or co-sponsored meetings. No one who has already given a Medallion Lecture (or a Special Invited Paper) is eligible to be chosen again as a Medallion Lecturer, although they may still be chosen as a Named Lecturer. Each Medallion Lecturer receives a Medallion during a brief ceremony preceding the lecture. The Committee on Special Lectures is advised to include in its selections of Medallion Lecturers at least two people in probability; at least two people in statistics; and additionally at least one person in an interdisciplinary area. If this requirement conflicts with the available Medallion Sessions, the composition of the Medallion slate will be set by the Chair of the Committee and the Program Secretary.
2. **Named Lectures:** All IMS Named Lectures are also selected by the Committee on Special Lectures and are given at the Annual Meeting. The Wald Lectures are given each year. In years where the Annual Meeting is at the JSM or the World Congress there is one additional Named Lecture, and in other years there are two additional Named Lectures. The Le Cam Lecture is given every third year, and the other occasions alternate between the Blackwell, Neyman and Rietz Lectures. Brief descriptions of these named lectures are as follows:
 - a. *Wald Memorial Lectures:* The Wald Memorial Lectures honor Professor Abraham Wald. The Wald Lecturer gives two, three, or four one-hour talks on one subject. This gives sufficient time to develop material in some detail and make it accessible to nonspecialists.
 - b. *Blackwell Lecture:* The Blackwell Lecture should reflect one of Blackwell's many interests in probability, statistics, and/or the allied fields of game theory and information theory and could serve to bring these fields closer to statistics and vice versa.
 - c. *Le Cam Lecture:* The Le Cam Lecturer should be an individual whose contributions have been or promise to be fundamental to the development of mathematical statistics or probability.
 - d. *Neyman Lecture:* The Neyman Lecture ordinarily will emphasize the interactions between statistical theory and scientific research.
 - e. *Rietz Lecture:* The Rietz Lectures are named after the first President of the Institute of Mathematical Statistics, Professor Henry L. Rietz. The Lectures are intended to be of broad interest and serve to clarify the relationship of statistical methodology and analysis to other fields.

More information about these awards and a listing of awardees and lecturers over the years can be found in the hyperlink *List of IMS Awardees and Lecturers*.



6 IMS Co-Sponsored Awards & Lectureships

The Institute also sponsors awards and lectures jointly with other societies and organizations.

- The IMS and the Bernoulli Society also jointly sponsors two special lectures. These are the *Doob Lecture* and the *Schramm Lecture*. Click on the hyperlink *Doob and Schramm Lectures* for more information and a list of recipients of these lectures.
- **COPSS Awards:** The Committee of Presidents of Statistical Societies (COPSS) Awards are **jointly** sponsored by the American Statistical Association (ASA), the IMS, the International Biometric Society ENAR, the International Biometric Society WNAR, and the Statistical Society of Canada. They are the *R.A. Fisher Lectureship*; the *Florence Nightingale David Award*, the *Elizabeth L. Scott Award*, the *George W. Snedecor Award*, and the *President's Award*. Each award consists of a plaque, a citation, and a cash honorarium. For more information and to see a list of recipients of this prestigious award, click on *COPSS Awards*.
- **The International Prize in Statistics Award:** The Institute is also a partner organization in the biennial *International Prize in Statistics* award, together with the ASA, International Biometric Society (IBS), International Statistical Institute (ISI), and the Royal Statistical Society (RSS). The prize recognizes the “major achievement” of an individual or team in the field of statistics. The primary objective of the International Prize in Statistics is to call public attention to the important role statistics, data analysis, probability, and the understanding of uncertainty have played in the past and are playing today in the advancement of society, science, technology, and human welfare, with a decided focus on current developments. Another leading objective is to identify penetrating and valuable insights and advances in statistics that can help achieve the primary objective (*See The International Prize in Statistics*).

7 Meetings, Conferences, and Workshops

The IMS supports professional meetings through sponsorship or co-sponsorship. Support takes the form of advertisement, access to members and membership lists, and IMS endorsement. The IMS does not offer financial support for sponsored or co-sponsored meetings. For some sponsored meetings, the IMS will share in profits/losses. For more details regarding possible involvement of IMS in sponsoring or co-sponsoring meetings, click the hyperlink *IMS Meetings*.

On odd years, the IMS holds its annual meeting in conjunction with the Joint Statistical Meetings (JSM); while on even years, it holds its annual meeting outside of North America and separate from the JSM. It participates through sponsored sessions in the ENAR Meeting, WNAR/SSC Meeting, Bernoulli Society-IMS World Congress in Probability and Statistics, the Conference on Stochastic Processes and their Applications (SPA), and the ISI World Statistics Congress. It also sponsors the annual meeting of the New Researchers in Statistics and Probability, which is an important venue to foster the professional development of new researchers in statistics and probability.

The IMS encourages its members to observe proper professional conduct while attending IMS sponsored or co-sponsored conferences or meetings (*see the IMS official statement below*).

7.1 IMS Statement on Professional Conduct at Meetings

The IMS is a society committed to the freedom of professional expression. The society wishes to foster a productive environment for the exchange of ideas and values participation of all members



of the statistical community. The society, therefore, considers it essential that professional conduct is observed at all its functions. Accordingly, all attendees of IMS sponsored and co-sponsored events are expected to show respect and courtesy to other attendees. The society is currently devising specific rules of conduct and institutional mechanisms for enforcement of these rules. In the meantime, IMS members and attendees of IMS functions are advised that the society can and will take steps to guarantee a professional atmosphere and, in particular, will not tolerate harassment in any form.

7.2 IMS Lecture Program

The IMS also sponsors an IMS Lecture Program. This program provides funding for prominent probabilists and statisticians to give lectures in developing countries which are targeted at researchers and graduate students. The motivation behind this program is that this will benefit a large number of researchers and graduate students in developing countries who cannot afford to travel overseas for scientific meetings. The chosen lecturer gives approximately three lectures to faculty, students, and a large audience.

8 IMS Journals and Publications

During its formation in the 1930s, the IMS official journal was the *The Annals of Mathematical Statistics*. This was split into two major journals in 1973 – *The Annals of Statistics* and *The Annals of Probability*, which are considered to be leading journals in mathematical statistics and in probability, respectively. Aside from these two major journals, the IMS also publishes several other journals, either in print-format or electronic online-only format. These are the journals: *Annals of Applied Probability*; *Annals of Applied Statistics*; *Statistical Science*; *IMS Bulletin*; *IMS Monographs / IMS Textbooks*; and the *NSF-CBMS Regional Conference Series*. In the past, IMS also published the *IMS Collections* and *Lecture Notes – Monograph Series*.

The Institute also co-sponsors some journals and publications. These are the *Current Index to Statistics*; *Electronic Communications in Probability*; *Electronic Journal of Probability*; *Electronic Journal of Statistics*; *Journal of Computational and Graphical Statistics*; *Probability Surveys*; and *Statistics Surveys*.

There are also existing journals that the IMS currently support. These are *ALEA – Latin American Journal of Probability and Mathematical Statistics*; *Annales de l'Institut Henri Poincaré*; *Bayesian Analysis*; *Bernoulli*; and *Brazilian Journal of Probability and Statistics*. The goals of the IMS for providing such support for these journals are as follows: (i) to encourage non-profit and/or societal journals to remain fully non-profit and autonomous; (ii) to assist such journals to raise their technical standard of production and distribution; (iii) to support the organizations that produce these journals; (iv) to provide a unified approach to resist the current trend toward commercialization of scholarly communication; and (v) to allow the IMS and other nonprofit/societal journals to compete with commercial journals by provision of joint marketing opportunities.

There also journals that are affiliated with the IMS, with the IMS allowing such affiliations in order (i) to encourage independent, nonprofit journal development in the field of probability and statistics; (ii) to provide the affiliated journal increased visibility, especially to IMS members and visitors to the IMS website; and (iii) to allow listing and aggregation of content from a variety of sources thus providing the IMS a more interesting web portal. These affiliated journals are *Observational Studies*; *Probability and Mathematical Statistics*; and *Stochastic Systems*.



To enhance dissemination of scholarly research and work, the IMS is highly involved with *Project Euclid*. This is a nonprofit online publishing service providing access to journals, monographs, and conference proceedings in the fields of theoretical mathematics and statistics with the specific mission of advancing scholarly communication in these fields and to address the unique needs of low-cost independent and society journals. Via a collaborative partnership arrangement, publishers involved in this project are able to join forces and participate in an online presence without sacrificing their intellectual or economic independence or commitment to low subscription prices. Access to IMS published, sponsored, co-sponsored, or affiliated journals can be found in the hyperlink *IMS Project Euclid Journals*.

9 On Fairness and Equal Opportunity

The IMS is deeply committed to the idea of fairness and for providing equal opportunity to its members. As such the IMS has a standing *Resolution on Equal Opportunities* contained in its Handbook which states:

The IMS is an equal opportunity organization, which seeks to ensure that all of its members participate in all of its activities to the fullest extent that is appropriate, regardless of age, sex, race or ethnicity, subject matter specialty, or any other characteristic. These opportunities for participation include, but are not restricted to membership of its standing committees, its program committees for sponsored and co-sponsored meetings, and its honors and awards, including fellowships and special lectureships.

Related Articles

The American Statistical Association; The International Prize in Statistics.

References

- [1] Stigler, S.M. (1996) The history of statistics in 1933. *Stat. Sci.*, **11** (3), 244–252.
- [2] King, W.I. (1930) The annals of mathematical statistics. *Ann. Math. Stat.*, **1** (1), 1–2.
- [3] Hunter, P.W. (1996) Drawing the boundaries: Mathematical statistics in the 20th-century America. *Hist. Math.*, **23**, 7–30.