Karl Pearson Lecture

2013 is the International Year of Statistics, in which the ISI established the Karl Pearson Prize in memory of the influential English mathematician and philosopher, Karl Pearson (1857-1936). This biennial prize is to recognise a contemporary research contribution that has had profound influence on statistical theory, methodology, practice, or applications. It consists of a €5,000 cash award sponsored by Elsevier Publishers and travelling expenses to the ISI WSC at which the winner will present the Karl Pearson Lecture.

The winners of Karl Pearson Prize

The inaugural Karl Pearson Prize is awarded to **Professor Peter McCullagh** and **Professor John Nelder** for their monograph *Generalized Linear Models (1983)*.

Peter McCullagh is the John D. Macarthur Distinguished Service Professor at the University of Chicago, a Fellow of the Royal Society, American Academy of Arts and Sciences, American Statistical Association and an elected member of the ISI. He has authored two books and published over 75 papers, winning him numerous awards and recognitions, including two Guy medals from the Royal Statistical Society (RSS): Bronze in 1983 and Silver in 2005, and the CPOSS President's award in 1990.
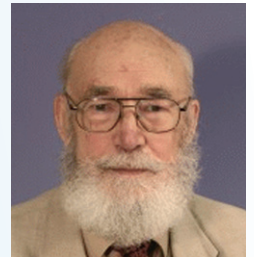
John Nelder (1924-2010) was among the most influential statisticians of his time, making pioneering contributions to statistical theory, computational methods, design of experiments and data analysis. He was elected a Fellow of the Royal Society in 1981 and was awarded the Guy medals in silver and gold by the RSS. He served also as President of the RSS and the International Biometrics Society. Retiring from the Head of the Statistics Department at the Rothamsted Experimental Station at the age of 60, he became a Visiting Professor at Imperial College London for the next 25 years. He passed away in August 2010.

The book by Professor Peter McCullagh and Professor John Nelder titled *Generalized Linear Models (1983)* provides a unified and self-contained treatment of linear models for analysing continuous, binary, count, categorical, survival, and other types of data, and illustrates the methods of application on different areas. This monograph has changed teaching, research and practice in statistics. Based on several groundbreaking papers, Peter and John had revitalised the subject and the accompanying tool, making them accessible to a vast number of researchers, graduate students, and practitioners.

Prize presentation and the Karl Pearson Lecture

The Karl Pearson Prize will be presented today, in which Professor Peter McCullagh will be attending and presenting his influential paper at the inaugural lecture.

In the lecture, Peter will discuss three recent instances of high-profile published scientific research in which statistics plays a prominent role. Topics involved include experimental design, how and what to count, data availability, reproducibility of the computations, appropriateness of the analyses, under- and over-dispersion, over-statement of the strength of evidence, and data anomalies. Be sure not to miss this lecture on a momentous book by the author himself!

Date : 27 August, 2013 (Tuesday)
Time : 15:30 – 17:45
Venue : Convention Hall B

P.3 **Reception for ISI Members**

P.3 **Young Statisticians Reception**

P.4 **Scientific Programme**

IAOS
International Association for Official Statistics

P.8 **ISI Bulletin Board**

Daily announcements

The Hong Kong Night: Be prepared for the excitements!

The Hong Kong Night will be held tonight at City Hall Maxim's Palace (2/F, Low Block, City Hall, Central, Hong Kong), which is located in an iconic tourist landmark in Central. Cocktail reception will be served from 18:30, and dinner will start at 19:30. There will be entrancing performances staged. For those who have registered for the Night in advance, be sure not to miss this fabulous event!

Complimentary round-trip transportation between HKCEC and City Hall Maxim's Palace will be available. If you are interested in taking the complimentary ride to the restaurant, please gather at the Convention Foyer on 1/F of HKCEC from 17:45 to 18:15 for boarding. The return transportation after the event will be from the restaurant to HKCEC, stopping by Admiralty MTR station.

Today's events	Time & venue
International Association for Official Statistics (IAOS) General Assembly	11:15 - 13:00 Theatre 1
International Association for Statistical Computing (IASC) General Assembly	11:15 - 13:00 Theatre 2
Hong Kong Night	19:30 - 22:00 City Hall Maxim's Palace

Open Meeting on Statistical Capacity Building scheduled for 28 August 2013

Time & venue : 11:15 – 13:00, Theatre 2

Read more about this meeting in tomorrow's Daily News

Hong Kong Statistical Society
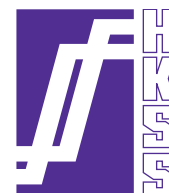
The Hong Kong Statistical Society (HKSS) was founded by Professor John Aitchison, F.R.S.E., in 1977 with the aim of promoting the development of statistics in Hong Kong. At present, HKSS has about 300 members.

HKSS has been making substantial contributions to the development of statistics in Hong Kong over the past 35 years. A complete accreditation and examination system has been set up by HKSS for statistical professionals in Hong Kong. The qualifications awarded are widely recognised and respected, locally and internationally.

Promoting public awareness of statistics is a key objective of HKSS. We have organised a host of educational activities, including the Statistical Project Competition starting from 1986 and the Statistics Creative-Writing Competition from 2009. These two annual competitions encourage the younger generation to understand and apply statistics in their daily life. So far, over 5 000 students have participated in the competitions.

HKSS is participating in the International Year of Statistics 2013 (Statistics2013). A public seminar featuring Statistics2013 will be held on the "Youth Theme Day" of the 59th WSC of ISI. We are very proud to have Professor Byeong U. Park and Miss K L Chan as speakers. You are cordially invited to join this seminar which will be held at Function Room N201 at 11:30-13:00 on 28 August.

Come to our booth at the exhibition (Booth Nos. 1 and 2 in Hall 3G) to find out more about us, or visit our website at www.hkss.org.hk.

Professor Kai-wang Ng
President of HKSS

Reception for ISI Members: A long awaited get-together

Reception for ISI Members was successfully held yesterday in a relaxing ambience with over 200 distinguished participants attending. The Reception has a two-fold meaning for the statistics profession. Firstly, it is significant for the celebration of the International Year of Statistics and secondly, it is a very important event for the ISI that has recently revised their Statutes to facilitate young and entry-level statisticians to join ISI as Regular members. The reception offered a great opportunity for the members to meet and start off days of captivating experience at the 59th ISI WSC.

One of the participants at the Reception was Dr Philip L.H. Yu, Associate Professor of Department of Statistics and Actuarial Science at the University of Hong Kong, who presented together with Professor Wai-keung Li their research paper titled "Statistical curricula development at the University of Hong Kong" in yesterday's scientific session (IPS060).

Dr Yu tells **Daily News** "I have been ISI member since 2005. I am currently Council member of the International Association for Statistical Computing (IASC) and also Associate Editor for the Journal Computational Statistics and Data Analysis published by IASC." When being asked about his advice to the young members, he says, "Statistics is not just about putting numbers to formulae. A statistician has to understand thoroughly the compilations, and the meaning behind numbers. Moreover, good communication skills are crucial nowadays, as statisticians are tasked to explain the result and methodology in layman terms to audience who may not have much background in statistics."

Dr Philip Yu (right)

Young Statisticians Reception: An inspiring experience for young professionals

The Young Statisticians Reception held yesterday was truly a memorable evening for our young statistics practitioners. Young statistical professionals from different countries and cultural backgrounds gathered at the HKCEC to meet with other young fellows and experienced statisticians and talk in their common language: statistics.

The Scientific Programme column of this **Daily News** introduces a number of scientific papers in diverse disciplines. Nevertheless, the papers introduced here are merely a fraction of the whole Scientific Programme. A full list of the scientific sessions is available at the 59th ISI WSC website (www.isi2013.hk/en/index.php) and the *Information Bulletin No.2*.

Inference distributions for a parameter: Are they calibrated?

D.A.S. Fraser is Professor Emeritus of Department of Statistical Sciences, University of Toronto, Canada and Saw Swee Hock Visiting Professor in Statistics at the University of Hong Kong. He was elected Fellow by the Royal Society of Canada and conferred Officer of the Order of Canada by the Government of Canada, both for his contributions in the discipline of statistics. In today's *Invited Paper Session* "Distributional inferences in statistics", Professor Fraser will be presenting his paper entitled "Inference distributions for a parameter: Are they calibrated?" (IPS028, 09:00 at Convention Hall C).

Presenting inference for a parameter in distributional form has been a natural and very long standing expectation of the statistics community. Bayes was probably the first to do so, in his work published in 1763, and later Laplace promoted non-informative priors. Then in 1930 Fisher introduced fiducial distribution in Proc. Cambridge Phil. Soc. Vol 26 which later became confidence distribution. There are also other variants throughout the history of statistics. In this session, Professor Fraser will give a brief overview and focus on the question: Can these approaches be calibrated?

What is the big deal about big data?

"Big data" is the latest term used to capture the "data deluge" phenomenon that we have been experiencing in recent years. Examples abound in science, business and industry, government, and society at large – from Facebook to smartphones; data on customer transactions to Internet traffic and world-wide-web; astronomy and physics to environment and health. At today's *Invited Paper Session* of "Big data" (IPS106, 09:00 at Convention Hall A) chaired by Xuming He, H. C. Carver Professor of Statistics, University of Michigan, distinguished speakers will describe latest applications and research in different areas, and also provide an overview of recent developments and opportunities for statisticians.

Talks to be delivered in the session include:

Paper 1: "What is the big deal about big data?" by Vijay N. Nair, D.A. Darling Professor of Statistics and Professor of the Department of Industrial & Operations Engineering, University of Michigan; President-elect of ISI

Paper 2: "Massive weather (re)forecast data: Challenges and opportunities for statisticians" by Tilmann Gneiting, Professor of Mathematical Statistics, Institute of Applied Mathematics, University of Heidelberg

Paper 3: "Big data and complex modelling challenges in astronomy and solar physics" by David A. van Dyk, Chair Professor, Department of Mathematics, Imperial College London

Paper 4: "Statistical techniques for big data optimization" by Tong Zhang, Professor of Department of Statistics, Rutgers University

The converse of Bayes' Theorem: plausible conjecture on why Bayes did not send off his Essay

Professor Kai-wang Ng is Patrick S C Poon Professor in Statistics and Actuarial Science, the University of Hong Kong, and the President of the Hong Kong Statistical Society. At today's *Invited Paper Session* of "History II: Pierre Remond de Montmort, Thomas Bayes, and probability in China", he will explain to us his paper "A conjecture on why Bayes did not send off his Essay" (IPS036, 13:00 at Theatre 1).

This year marks the 250th anniversary of the Bayes' Theorem, or Bayes' Formula, which is among the basic theorems of conditional probability and is the foundation of the very popular Bayesian paradigm of inference in the last 30 years or so. Although Bayes was a Fellow of the Royal Society (F.R.S.) of London since 1742, he had never sent off the manuscript during his lifetime to the Royal Society for publication or to close friends for circulation. The paper containing this theorem was a posthumous publication by a friend of Thomas Bayes. It is therefore a mystery as why Bayes withheld the manuscript, for which there were already a number of conjectures. In this session, Professor Ng will put forward a different conjecture, which is that Bayes saw the converse of his own theorem and the implied two-way nature of the very process in the inference paradigm, therefore he wanted to refine it before publishing, but died before being able to do so. Professor Ng will show that the Converse can be easily derived from the available mathematics at Bayes' time – the strong evidence that Bayes could have seen the Converse in view of his well-known mathematical ability as an F.R.S. and his second-to-none familiarity with the subject which he originated.

New method for backtesting investment portfolio

Qiwei Yao is Professor in the Department of Statistics of the London School of Economics and Political Science. He will be presenting a paper called "Matching quantiles estimation and selecting representative portfolios" at the *Invited Paper Session* on "Statistical methods for analysing financial data" (IPS026, 09:00 at Theatre 1).

In an effort to overcome backtesting problem on risk management of banks in selecting a representative portfolio, the authors of the paper propose a new Matching Quantiles Estimation (MQE) method. Its computation is an iterative procedure based on the ordinary least squares estimation. Professor Yao will illustrate the finite sample properties numerically through both simulation and a real data example on selecting a counterparty representative portfolio for a bank. Apart from selecting a representative portfolio, the proposed MQE finds applications also in portfolio tracking which demonstrates the potential usefulness of combing the MQE with the Least Absolute Shrinkage And Selection Operator (LASSO).

A new formulation of self-consistent censored regression

Dr Limin Peng is Associate Professor in Department of Biostatistics and Bioinformatics, Rollins School of Public Health, Emory University, Atlanta. At today's *Invited Paper Session* on "Quantile regression – Recent development of theory and applications", she will introduce a paper titled "Self-consistent estimation of censored quantile regression" (IPS022, 09:00 at Room S428).

The principle of self-consistency has been employed to estimate regression quantile under a randomly censored response. In this talk, Dr Peng will present a new formulation of self-consistent censored regression quantiles based on stochastic integral equations. She will show how the new representation of censored regression quantiles can, on one hand, entails a clearly defined estimation procedure, while on the other hand, greatly simplifies theoretical investigations. She will also demonstrate the large sample equivalence between the proposed self-consistent estimators and the existing estimator derived from martingale-based estimating equations. The connection between the new self-consistent estimation approach and previous self-consistent algorithms will be elaborated.

Beyond 2011 - A new paradigm for population statistics

Peter Benton is a Deputy Director of the Office for National Statistics (ONS), UK, and Head of the "Beyond 2011" programme at the ONS. Today, he will be presenting his paper named "Beyond 2011 – A new paradigm for population statistics?" at the *Invited Paper Session* "Administrative censuses: Approaches when national population registers are not complete, or not available" (IPS027, 09:00 at Convention Hall B).

According to Peter, not just that the challenges and costs facing a census have been ever increasing, the dynamic nature of populations, advances in information technology and demand for more frequent and more detailed statistics all call for imminent changes in census methods. In view of this, the ONS has initiated the "Beyond 2011" programme, evaluating a range of statistical solutions to meet future user needs for population and small area socio-demographic statistics for England and Wales. In this talk, Peter will provide a summary of research-to-date and emerging findings, where new surveys and statistical methods are being explored to address problems on population coverage and collection of additional data not included in administrative data solutions.

A better way to control errors

False discovery rate (FDR) has received great attention in the error control of multiple tests. However, conventional FDR control ignores the signs of the effects, which is, in principle, confusing. Also, most multiple tests are derived from models for test statistics rather than those for basic responses, and ride on the assumption that the tests are independent among themselves. However, observations (and therefore, tests) in areas like genomics and neuroimaging are often correlated.

In view of the above, Youngjo Lee, Professor in the Department of Statistics at Seoul National University, will present a paper titled "Error controls in multiple testing under dependence" at today's *Invited Paper Session* named "Advances in generalised linear and nonlinear mixed model with environmental applications" (IPS035, 13:00 at Room S428). Professor Lee will introduce the optimal likelihood tests derived from models for basic responses and use a numerical study to show how the proposed method outweighs existing ones. Real data examples of gene expression and neuroimage will also be used to demonstrate that finding the best-fitting model is crucial for the behaviour of multiple tests, of which model selection tools in the likelihood approach has been found to be useful in this aspect.

German Time Use Survey 2012/13

Time use surveys are used to report structural data on how, on average, people spend their time. These surveys can classify and quantify the main types of activity that people engage in during a definitive time period. At today's *Invited Paper Session* "Time use surveys – Experiences and perspectives for the future", Anette Stuckemeier from the Federal Statistical Office of Germany will present a paper entitled "German Time Use Survey 2012/13" (IPS038, 15:30 at Room S421).

She will provide information on the 2012/13 Time Use Survey conducted in Germany on time spent on employment, household activities, education, cultural activities, voluntary work, social engagement and time use of children. The data collected from the survey have also made it possible to construct a satellite system of household production in parallel to the National Accounts. The current German survey also includes questions on subjective feelings of time use to estimate the well-being of different population groups. Details on the approach and methodology of the survey will be put forward.

Improved methods to estimate Purchasing Power Parities (PPPs)

The use of exchange rate conversion factors for comparing statistical indicators across countries was associated with a number of shortcomings, such as distortion of exchange rates by speculative movements, government interventions, etc. Recognising the shortcomings, the international community established the International Comparison Programme (ICP) to generate PPP data. By establishing purchasing power equivalence, where one dollar purchases the same quantity of goods and services in all countries, PPP conversions allow cross-country comparisons of economic aggregates on the basis of physical levels of output, free of price and exchange rate distortion.

Frederic A Vogel, Global Manager of International Statistics of Development Economics Data Group, the World Bank, will provide an overview of major methodological changes being implemented in the ICP and their impact on the final results at the *Invited Paper Session* on "Measuring the real size of the world economy: Methodological and quality improvements of the ICP" (IPS043, 15:30 at Convention Hall A). According to Frederic, the most significant change described is the evolution of regional PPPs from a price list of only a few countries in each region, to a set of global core products priced by every country as part of their regional price list. With such, PPPs can be linked to GDPs using a global aggregation approach rather than the two stage aggregation used in the past.

A roadmap for new methodological directions in the Australian Bureau of Statistics

Dr Siu-Ming Tam is the Chief Methodologist at the Australian Bureau of Statistics (ABS). Today, he will present at *Special Topic Session* "Experiences when building the methodological architecture for statistics production" on his paper entitled "Methodology architecture - A roadmap for new methodological directions in the Australian Bureau of Statistics" (STS026, 09:00 at Room S425).

In order to maintain a strong brand of the ABS as a central statistical agency into the 21st century, ABS has made transformation to the way it acquires, collates, uses, reuses and disseminates statistical information. The transformation aims to provide the ABS with capability to create richer and more granular statistical products and services, and a new business platform for the more efficient and effective production of official statistics. The transformation is underpinned by the development of a Methodology architecture (MA). In his presentation, Dr Tam will outline the work of the ABS on the MA and the challenges faced to achieve the desired goals.

Integrating agricultural census and population census data

Dr Eva Laczka is the Deputy President for Economic Statistics of the Hungarian Central Statistical Office (HCSO). Today, she will be presenting a paper titled "Integration of agricultural census and population census data" at the *Special Topic Session* "New approaches for agricultural statistics" (STS025, 15:30 at Room S425).

In Hungary, a general agricultural census was carried out in 2000, followed by the population and housing census in 2001. The two censuses had been designed separately, but the matching of the databases and the aggregated handling of the information increased the analytical potential of both censuses and allowed for more sophisticated studies. Under such a matching process using a joint database of an agricultural and population census, new statistical approaches for gender disaggregated analysis entailed. By using the linked database, the HCSO was able to compile a series of publications on the households living in agricultural private holdings in the countryside. In Dr Laczka's presentation, she will describe the method of matching the databases of the two censuses.

ISI General Assembly

HKCEC, Convention Hall B
16:30-19:00, Thursday, 29 August 2013

Draft Agenda

1. Welcome and Minute of Silence

2. President's Report: 2011-13
   Presentation of the ISI's activities and accomplishments from September 2011 to August 2013

3. Report on ISI Finances 2012

4. Annual Report 2012
   Presentation and approval of the 2012 Annual Report

5. Announcement of Members of the Executive Committee and Council for 2013-2015

6. Reports on Elected and Regular Membership

7. Report by the Chair of the WSC Scientific Programme Committee for Hong Kong

8. IASS Statutes
   The IASS, which was established under French law, is being relocated to the Netherlands and being re-established under Dutch law. This requires formal approval of the ISI General Assembly.

9. Reports by the Association Presidents
   A. Bernoulli Society
   B. IAOS
   C. IASC
   D. IASE
   E. IASS
   F. ISBIS
   G. TIES

10. Future World Statistics Congresses
    A. 2015 Rio de Janeiro: Formal invitation by the Brazilian Delegation
    B. 2017 Marrakesh: Approval by General Assembly
       Proposal by the Moroccan authorities to host the 2017 WSC in Marrakesh, Morocco

11. Presentation of Service Certificates

12. Matters Arising and Discussion

13. Closing Remarks

International Association for Official Statistics

Hundreds of statisticians from statistical offices and other agencies across the globe, with colleagues who support them or use their statistics, are taking advantage of the ISI WSC to exchange information, learn best practices, and make and renew professional relationships and friendships.

The IAOS has organised ten major sessions on official statistics and there are many others too. They include topics as varied as geographic information systems, crime statistics, the quality of life, and time use surveys. These IAOS sessions provide a useful link between our own biennial conferences – last year's in Kiev was on Getting Our Messages Across, and next year on 8 to 10 October 2014 we will be meeting in DaNang, Vietnam, to discuss how best to meet the statistical needs of a changing world. We take the opportunity at these conferences to organise training sessions, so check our website for more details.

Have you looked at some of the recent editions of our *Statistical Journal*? The latest edition includes some useful articles on automated data collection and evaluating census quality as well as other topics. Coming up are an edition on interviews with statistics leaders and another one based on the Kiev conference.

We continue to focus our activities on younger statisticians, and this year, in honour of the International Year of Statistics, we expanded our Young Statisticians Prizes, enabling three winners to present their papers here in Hong Kong.

If you want to find out more about the IAOS, come to our General Assembly on 27 August (today) at 11:15, visit the ISI stand, or have a look at our website isi.cbs.nl/iaos.

Stephen Penneck
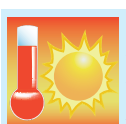IAOS, Outgoing President

Weather forecast
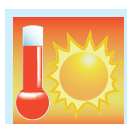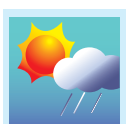
August 27 Tuesday	Mainly fine & very hot 27 - 33°C
August 28 Wednesday	Mainly fine & very hot 27 - 33°C
August 29 Thursday	Mainly fine & very hot 28 - 33°C
August 30 Friday	Sunny periods & showers 28 - 32°C
August 31 Saturday	Mainly cloudy & showers 27 - 31°C
September 1 Sunday	Mainly cloudy & showers 26 - 30°C