# Announcement of the Awardee of the Second Akaike Memorial Lecture Award

**Awardee/Speaker:** Professor Mike West (Duke University, USA)

**Lecture Title:** Bayesian Forecasting of Multivariate Time Series:
Model Scalability, Structure Uncertainty and Decisions

**Debater:** Dr. Jouchi Nakajima (Bank for International Settlements)
Dr. Christopher D. Glynn (University of New Hampshire)

**Date/Time:** September 10, 2018 (a.m.)
1. Award Ceremony
2. Akaike Memorial Lecture
3. Discussion with Young Scientists
4. Others

**Venue:** Building No. 5, Room 5534, Korakuen Campus, Chuo University
(1-13-27 Kasuga, Bunkyo-ku, Tokyo 112-8551, Japan
http://global.chuo-u.ac.jp/english/siteinfo/visit/korakuen/)

\* Detailed information will be uploaded on the website of ISM
(http://www.ism.ac.jp/index_e.html) and other media.

## Professor Mike West (current age, 61)
Duke University distinguished professor: The Arts & Sciences Professor of Statistics and Decision Sciences, in the Department of Statistical Science at Duke University

Professor West's pioneering research throughout the field of Bayesian statistics has paved the way to the application of Bayesian methods to practical data analyses. He has made great contributions to theoretical and algorithmic innovations opening new opportunities to practitioners of statistics. Professor West himself has contributed significantly to the creation of data-driven sciences by advancing frontier research in a broad range of applied fields.

## Dr. Hirotugu Akaike
The late Dr. Akaike was a statistician who proposed the Akaike Information Criterion (AIC). He established a novel paradigm of statistical modeling, characterized by a predictive point of view, that was completely distinct from traditional statistical theory. Dr. Akaike's research has greatly influenced a wide range of research areas.

Hirotugu Akaike (1927.11-2009.08)

June 25, 2018

# Announcement of the Awardee of
# the Second Akaike Memorial Lecture Award

## ◆ Overview:

In May of 2016, the Institute of Statistical Mathematics (ISM) and the Japan Statistical Society (JSS) have jointly created the Akaike Memorial Lecture Award to celebrate the outstanding achievements of the late Dr. Hirotugu Akaike. Dr. Akaike greatly influenced a wide range of research by proposing the Akaike Information Criterion (AIC) and establishing a novel paradigm for statistical modeling, which was distinguished by its predictive point of view, and was totally distinct from traditional statistical theory. The Akaike Memorial Lecture Award aims to encourage the education of talented young researchers by recognizing researchers who have achieved outstanding accomplishments that contribute to the field of statistical sciences.

With great pleasure, we announce that the awardee of the Second Akaike Memorial Lecture Award is Professor Mike West of Duke University in USA. Professor West's contributions to Bayesian statistics include seminal work in dynamic modeling, and the implementation of nonparametric models that paved the way to practical data analyses via the first realization of large-scale simulation-based methods. Professor West himself has also actively worked at the frontiers of various research fields to which Bayesian statistics can be applied and contributed to the creation of data-driven sciences. For example, he established a new approach for biomarker discovery using gene expression data, thus creating a novel trend in omics biology based on data analysis. The award ceremony and memorial lecture will be held during the plenary session of the Japanese Joint Statistical Meeting 2018, which will take place at the Korakuen Campus of Chuo University on September 10, 2018.

**Reason for Selection:**

Professor Mike West is a great pioneer in the field of Bayesian statistics. He receives the Second Akaike Memorial Lecture Award for his wide-ranging and outstanding research accomplishments in both theoretical and practical aspects of this field.

Professor West has made significant contributions to the development of statistical sciences, including dynamic modeling, space–time data analysis, sparse modeling, Bayesian computation, and non-parametric Bayesian analysis. The applied fields to which Prof. West has contributed include finance, macroeconomics, climatology, and biology. His paper on Dirichlet Process mixture models, published in 1995, offered an easy-

to-implement and efficient algorithm for the model. Previously, even though its usefulness had been understood theoretically, this model had not been used in practice due to difficulties in its computation. Professor West's algorithm represented a major contribution to the practical realization of the non-parametric Bayesian analysis. The magnitude of this influence is illustrated by the fact that the paper has been cited more than 2000 times [1]. In addition, in 2001 and 2006, Professor West published important papers pertaining to cancer prognosis using gene expression data, conducted jointly with leading molecular geneticists. These papers identified patterns of cell signaling pathway deregulation by combining signature-based predictions and developed predictive models for identifying types of breast cancer [2,3]. These outcomes led to the occurrence of a mega-trend in omics biology: biomarker discovery through gene expression profiling.

For these reasons, the nominating committee is proud to select Professor West as the awardee of the Second Akaike Memorial Lecture Award.

## ◆ About the Second Awardee: Professor Mike West

**Research Achievements**

Professor Mike West is one of the pioneers who have led the field of the Bayesian statistics. In particular, Professor West's research on Bayesian modeling of dynamic processes, high-dimensional data and large-scale complex systems has significantly influenced the development of the theory and practice of statistics. Professor West's broad activities range from statistical theory, including time series, high-dimensional space–time data analysis and sparse modeling, to application, including decision-making theory for financial time-series data analysis, structure modeling, analysis of high-frequency financial time series data, macroeconometrics, dynamic network analysis, image recognition, system biology, and analysis of air environment monitoring data.

After obtaining his Ph.D. in Mathematics at the University of Nottingham, UK, Professor West has published nearly 200 papers in numerous fields, ranging from pure statistical theory to applied research in fields including business, economy and finance, signal processing, climatology, public health sciences, genome sciences, immunology, neurophysiology, and systems biology.

Professor West has devoted himself passionately to education in statistics, and has made outstanding accomplishments in education. Over the course of his career, he has instructed young statisticians from industry, government, and academia around the world, and mentored more than 55 talented doctoral students and post-doctoral researchers.

Additionally, Professor West was awarded the Mitchell Prize (three times, in 1994, 1997, and 2012); the American Statistical Association Outstanding Statistical Application Paper Award (1997); the American Statistical Association NC Chapter Award (2014); and the Zellner Medal from the International Society for Bayesian Analysis (2014).

[1] Escobar, M.D., West, M.(1995). Bayesian density estimation and inference using mixtures. Journal of the American Statistical Association 90:577-588.

[2] Bild, A.H., Yao, G., Chang, J.T., Wang, Q., Potti, A., Chasse, D., Joshi, M., Harpole, D., Lancaster, J.M., Berchuck, A., J.A. Olson, J.R.M., Dressman, H.K., West, M., Nevins, J.R.(2006). Oncogenic pathway signatures in human cancers as a guide to targeted therapies.    Nature 439:353-357.

[3] West, M., Blanchette, C., Dressman, H.K., Huang, E.S., Ishida, S., R. Spang, H.Z., Marks, J.R., Nevins, J.R. (2001). Predicting the clinical status of human breast cancer utilizing gene expression profiles. Proceedings of the National Academy of Sciences 98:11462-11467.

**Current Position**

The Duke University distinguished Arts & Sciences Professor of Statistics and Decision Sciences,

in the Department of Statistical Science, Duke University

**Biography**

**Date of birth:**        October 30th, 1956 (current age, 61)

**Education:**

1978    B.Sc. Mathematics, First Class Honors, Department of Mathematics, University of Nottingham, UK

1982    Ph.D. in Mathematics (Statistics), University of Nottingham, UK

**Professional Summary**

| | |
|---|---|
| 1981–1988 | Lecturer at Department of Statistics of University of Warwick, UK |
| 1984 | Visiting Professor at Harvard University, USA |
| 1987 | Visiting Professor at Purdue University, USA |
| 1988-2003 | Associate Fellow at Department of Statistics of University of Warwick |
| 1994 | Senior & University Fellow at the National Institute of Statistical Sciences (NISS), USA |
| 1988–1992 | Associate Professor at the Institute of Statistics and Decision Sciences (ISDS) of Duke University, USA |
| 1990–2002 | Director at ISDS |
| 1992–2007 | Professor at ISDS |
| 1999–present | Distinguished Professor at Duke University |
| | Professor in the Division of Statistics of Duke University |
| 2007–present | Professor in the Department of Statistical Science, Duke University |

◆ **Overview of the Akaike Memorial Lecture Award**

The Akaike Memorial Lecture Award was inaugurated in 2014 under the joint sponsorship of ISM and JSS. The Award was named after the late Dr. Hirotugu Akaike (*1), who left a wide-reaching and influential legacy

of research in the statistical sciences. Along with the Award, the ISM and JSS organize a memorial lecture by the awardee, offering opportunities for exchange among statistical researchers from within and outside Japan as well as inspiration to young and talented researchers. Thus, the Award contributes to further advances in this field.

Every 2 years, one awardee is selected from among those individuals who are, like the late Dr. Akaike, ahead of their times, exercising an international influence over a wide range of fields in the statistical sciences (including mathematical sciences and mathematical engineering, such as control and optimization) and related applied fields. The awardee receives a ¥100,000 honorarium, an award plaque, and travel expenses.

For educational purposes, the Memorial Lecture will be followed by time for question and discussion involving the Awardee and selected students and young researchers. The contents of the lecture, including the accompanying discussion, will be published as an invited article in the Annals of the Institute of Statistical Mathematics (AISM).

◆ **The Second Akaike Memorial Lecture**

The Second Akaike Memorial Lecture will be held during the plenary session of the 2018 Japanese Joint Statistical Meeting, which will be co-organized by the Institute of Statistical Mathematics and the Organizing Committee of the Japanese Joint Statistical Meeting 2018, commissioned by The Japan Statistical Society.

> Lecturer:　　Professor Mike West (Duke University)
>
> Title:　　Bayesian Forecasting of Multivariate Time Series:
>
> 　　　　Model Scalability, Structure Uncertainty and Decisions
>
> Discussants:　　Dr. Jouchi Nakajima (Bank for International Settlements)
>
> 　　　　Dr. Christopher D. Glynn (University of New Hampshire)
>
> Date/Time:　　September 10, 2018 (a.m.)
>
> Venue:　　 Building No. 5, Room 5534, Korakuen Campus, Chuo University
>
> 　　　　(1-13-27 Kasuga, Bunkyo-ku, Tokyo 112-8551, Japan
>
> 　　　　http://global.chuo-u.ac.jp/english/siteinfo/visit/korakuen/ )

Note: Detailed information will be uploaded on the following websites:

Institute of Statistical Mathematics (http://www.ism.ac.jp/index_e.html)

Japanese Joint Statistical Meeting 2018 (http://www.jfssa.jp/taikai/2018/english/index.html)

Japan Statistical Society (http://www.jss.gr.jp/en/).

## (*1) Biography of Dr. Hirotugu Akaike

Born on November 5, 1927 in Shizuoka Prefecture, Japan, Hirotugu Akaike graduated from the Imperial Naval Academy, the First Higher School, and the Department of Mathematics, and the Faculty of Science, The University of Tokyo. He joined the Institute of Statistical Mathematics in 1952.

In the 1960s, Dr. Akaike led the field of time series analysis through his research and development of spectral analysis techniques, multivariate time series models, statistical control methods, and TIMSAC (Time Series Analysis and Control), a software package designed for time-series analysis. In the 1970s, Dr. Akaike proposed the Akaike Information Criterion (AIC). Thus, he established a new paradigm of statistical modeling, which was characterized by a predictive point of view, and therefore completely distinct from traditional statistical theory. His accomplishments have greatly influenced research in a variety of fields. In 1980s, Dr. Akaike advanced his research to realize the practical application of Bayesian modeling. His research played a pioneering role in the development of new information processing systems that could meet the demands of the era of large-scale information. His research results were held in the highest esteem by his colleagues and earned him many prizes, including the Medal of Honor (Purple Ribbon), the Second Class Order of the Sacred Treasure, and the Kyoto Prize. His work continues to be cited today.

Dr. Akaike took the position of Director-General of the ISM in 1986. While overseeing the operation of the Institute, he also took part in establishing and teaching in the Statistical Studies program at the Graduate University for Advanced Studies. His term as Director-General ended in 1994. At that time, he was appointed Professor Emeritus at the Graduate University for Advanced Studies, but never lost his passion for research; rather than resting on his well-deserved laurels, he continued his work, publishing studies of topics as diverse as Bayesian models and the golf swing. He also served as the 19th president of the JSS from January 1989 to December 1990. He passed away in Ibaraki Prefecture, Japan on August 4, 2009 (age 81).

On November 5, 2017, a celebration of Dr. Hirotugu Akaike's 90th Birthday appeared on the Google Doodle in 16 countries and regions around the world.

Memorial Website for Late Dr. Akaike: Hirotugu Akaike Memorial Website

    http://www.ism.ac.jp/akaikememorial/index-e.html

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