A Conversation with Jianqing Fan

2012 ICSA Awards

A Statistician at NIAID

Statistical Contributions to the Regulatory Science of CDER of US FDA

Statisticians at Work at the FDA's Center for Biologics Evaluation and Research

统计词话

那些年，我们一起追的 EB

The 2013 ICSA/ISBS Joint Conference
⇒ UCSD graduate student volunteers at the ICSA desk at JSM 2012.

⇐ Howell Tong, Professor Emeritus at London School of Economics, receiving Distinguished Achievement Award from ICSA president Ivan Chan.

⇒ Jun Liu, Professor at Harvard University, receiving Distinguished Achievement Award from ICSA president Ivan Chan.
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Celebrating the International Year of Statistics

Jun Yan

The long awaited 2013 --- the International Year of Statistics (http://www.statist...013.org/) --- has finally arrived. What can we do at the ICSA Bulletin to celebrate it? With this question in mind, I have chatted with colleagues, friends, and students at various occasions since the 2012 July issue was in production, soliciting ideas and suggestions. I hope our members find this issue interesting or even engaging. We have a collection of articles, ranging from conversation with a distinguished statistician, statisticians at work at NIH and FDA, to blog articles from younger generation statisticians. And yes, as you noticed on the front cover, we have articles in Chinese, which represent an additional dimension for the ICSA Bulletin --- after all, we are an international association and it is the International Year of Statistics.

It is perfect timing to resume the column of “Conversation with a Distinguished Statistician”, which had published interesting articles under the editorship of Sue-Jane Wang and Kao-Tai Tsai. The first Pao-Lu Hsu Award was announced at the ICSA banquet at JSM 2012 in San Diego, and three distinguished statisticians, Profs. Xiao-Li Meng, Jianqing Fan, and Bin Yu, share the honor. With encouragements from the ICSA officers, we started with them. Prof. Meng has already been interviewed by the ICSA Bulletin (2002). Profs. Fan and Yu both happily accepted our invitation. In fact, Drs. Yang Feng at Columbia University and Xin Tong at MIT, former students of Prof. Fan, have worked so efficiently with Prof. Fan that we have their article in this issue. The conversation with Prof. Yu, led by her former student, Prof. Tao Shi at the Ohio State University, has been planned and will be published in the next issue.

The Statisticians at Work column features three articles from statisticians working in federal governmental agencies. Dean Pollmann, National Institute of Allergy and Infectious Disease (NIAID), shares his personal experience in presenting the statistical results from a vaccine trial at a vaccine research committee meeting. He finds infectious disease fascinating and thinks of NIAID as an ideal place for statisticians who wants to make an impact in science. James Hung, Sue-Jane Wang, and Yi Tsong, Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA), tell about statistical contributions of the statisticians at their biometric divisions to the regulatory science at at CDER, FDA. Their colleagues at the Center for Biologics Evaluation and Research (CBER), John Scott and Lihan Yan, tell about the statistical work in another domain, regulating biological products for human use, at FDA.

During my search for interesting blog articles for the bulletin, the Capital of Statistics (COS, http://cos.name) caught my attention. Aiming to promote statistics and its applications, COS is actively maintained by a group of young statisticians of Chinese origin, many of whom are current students in schools around the world. I was deeply impressed by their thrilling passion, vivid language, endless energy, and savvy technical skills. The future of statistics is in the hands of this generation. Yixuan Qiu and Yihui Xie, Ph.D. student at Iowa State University and Purdue University, respectively, introduce COS and some blog articles. Yixuan Qiu clusters poets from the Song Dynasty and the tunes they had written for in a fascinating polar coordinate system. Can Yang, a post doc at Yale University, shares his following of Bradley Efron and his understanding of Efron’s statistical contributions. For the upcoming Valentine’s Day, Yu Lin, a master graduate at University of Western Ontario, shows how to make a perfect gift with R, and Sizhe Liu, a data mining analyst at 360buy Group, finds three keywords about love from text-mining the lyrics of 23 thousands Chinese songs.

Many have helped to put this issue together. Indeed, when many help to gather firewood, the flames shoot high. I am wholeheartedly grateful to all the contributors for spending their precious time writing for us, the contributing editors for soliciting contributions to our columns, and the ICSA officers for their full support, In style, the bulletin just made another steady step forward by allowing full length articles in Chinese and it was typeset with XƎTEX. The credit goes to my volunteer assistant Gong-yi Liao, who spent hours after hours developing the ICSABul package and solving all the technical issues.

Enjoy the International Year of Statistics!

Jun Yan
Editor-in-chief, ICSA Bulletin
Associate Professor
Department of Statistics
University of Connecticut

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From the 2013 President, ICSA

Ming-Hui Chen

Dear ICSA Members and Friends,

Happy New Year to all ICSA fellow members and friends! I would like to take this opportunity to thank you for entrusting me to lead and serve ICSA in 2013. I would also like to thank Ivan S. F. Chan, ICSA 2012 President, Naisyin Wang, ICSA 2011 President, Shu-yen Ho, the ICSA Executive Director (2011-2013), Lynn Kuo, the ICSA Treasurer (2010-2012), and the Board of Directors for their extraordinary efforts and great dedication that have enhanced the prosperity and progress of ICSA in the year of 2012.

The year of 2013 is extremely special to all statisticians as we are celebrating the International Year of Statistics worldwide. ICSA is proud to be an active participant of Statistics2013. I would like to thank Heping Zhang of Yale University for representing ICSA during the preparation of the celebration of Statistics2013. The year ahead will be full of ICSA meetings and conferences in 2013. The 22nd Annual ICSA Applied Statistical Symposium and the 3rd ISBS International Symposium on Biopharmaceutical Statistics will be held from Sunday, June 9 to Wednesday, June 12, 2013, at the Bethesda North Marriott Hotel & Conference Center, Bethesda, Maryland, USA. This will be the first symposium jointly organized by ICSA and ISBS. Thanks to Aiyi Liu, Yi Tsong, and Mark Chang for their devotion and efforts in organizing this joint symposium. The first symposium of the ICSA-Canada Chapter will take place on August 2, 2013 in Toronto. I would like to thank the Chapter President, Grace Yi, for initiating this event and leading the organizing committee. As usual, the ICSA annual members meeting will be held at the 2013 JSM in Montréal, Québec, Canada (August 3-8, 2013). I am so grateful for Xianming Tan (Chair, the ICSA Annual Meeting Committee) as he is taking on the responsibilities of planning and coordinating the ICSA activities at the 2013 JSM. At the end of 2013, ICSA members and friends are welcome to join the ICSA 9th triennial international conference, which will be held at the Hong Kong Baptist University, Hong Kong from December 20-23, 2013. During this conference, we will have an exciting ceremony for the first recipients of the P.L. Hsu Award. Thanks to the program chairs, Jiqian Fang, Ji Zhu, and Lixing Zhu, for their tremendous efforts in planning and organizing this triennial conference.

ICSA had another successful year in 2012. I would like to thank the leadership of the ICSA executives and board of directors as well as the contributions from various committees and members. In June 2012, we had a successful annual symposium held in the Westin Boston Waterfront Hotel, Boston, Massachusetts with 552 participants. I would like to take this opportunity to thank the organizing committee led by Mingxiu Hu, Tianxi Cai, and Hongliang Shi for their tremendous efforts. After the symposium, there will be a special volume, entitled “The 2012 ICSA Applied Statistics Symposium Proceedings”, published by Springer. The proceeding editors are Mingxiu Hu, Yi Liu, and Jianchang Lin, and I thank them for this important initiative. The establishment of the first ICSA chapter, the ICSA-Canada Chapter, was officially announced during the ICSA board meeting in June 2012. The first recipients of the P.L. Hsu Award were announced during the ICSA annual members meeting at the 2012 JSM in San Diego (August 1, 2012). The ICSA journals and co-sponsored journal continue to grow and become more and more being respected and recognized internationally. The credits for the success of these journals ought to go to these editors for their endless hard work and extraordinary efforts. I would like to thank Xihong Lin for agreeing to continue to serve as the editor of Statistics in Biosciences (SIB) for the second term and also thank the other two co-editors, Jose C. Pinheiro and Hongyu Zhao, for their continuous services. Thanks also go to Jeng-Min Chiou, Naisyin Wang, and Qiwei Yao for the continuous success of Statistica Sinica (SS) and Heping Zhang, Song Xi Chen and Yazhen Wang for flourishing Statistics and Its Interface (SII). Our editor-in-chief, Jun Yan, of the ICSA Bulletin, has prospered this publication into another level. Now, the ICSA bulletin not only has an ISBN, 2226-2393 but also features many new and interesting columns and short articles. Collaborating with Springer, ICSA officially launched a Springer ICSA book series in 2012. Thanks Ji-ahua Chen, the inaugural editor of this series, for his continuous effort to recruit and solicit potential contributing authors. I would love to see the first book in this series to be published in 2013. Finally, I
would like to thank Keying Ye to lead the ICSA Publication Committee for overseeing all ICSA publications in 2013. I sincerely hope that all fellow ICSA members enjoy free online access to all ICSA journals.

It was an enjoyable experience for me to complete the appointments of various committee chairs and new members during these last few weeks. I certainly sensed the strong support, enthusiasm, and dedication from you for serving ICSA. This year, we will face new challenges and difficult tasks in maintaining the continuous growth of ICSA. I am fortunate to be able to work with Shu-yen this year. However, his term as the Executive Director will end by December 31, 2013. One of the challenges this year is to find his successor. I will be working closely with the nomination and election committee chaired by Naitee Ting, the ICSA executives, and the board of directors to identify candidates for serving this important position. Recently, the ICSA membership size has been steadily increasing each year. ICSA has become the fourth largest statistical association in North America. However, it is not easy to sustain such success. I will be working closely with the ICSA Membership Committee chaired by Fang K. Chen to develop innovative ideas and strategies to expand the ICSA membership base. In particular, we need to reach out to young statisticians internationally. Currently, there are only a small fraction of ICSA members from mainland China and Europe. The establishment of new ICSA chapters at different regions across the globe such as Asia and Europe may potentially expand our ICSA membership base greatly and further increase the international visibility of ICSA.

It is also important to reach out to statisticians in different industrial sectors such as finance and insurance companies. You are more than welcome to send me any suggestions or input to tackle this great challenge. I will be working closely with the Finance Committee chaired by Linda Yau, the Award Committee chaired by Xiaotong Shen, and the Program Committee chaired by Zhezhen Jin to seek the feasibility of offering more travel awards to support young statisticians and students, especially those from the developing countries, to attend ICSA annual applied statistics symposiums and international conferences. I am confident that with the support of ICSA executives, board members, committees and fellow members, we will have another successful year in 2013.

The success of ICSA depends on the contributions from our volunteers and members. We are so grateful to have the continuous support from the office of ICSA at the Jiann-Ping Hsu College of Public Health, Georgia Southern University for ICSA daily operations and Lixin (Simon) Gao, BioPier, for the ICSA database and related IT operations. Your involvement and feedback in all aspects of ICSA activities are essential to further improve society and enhance our services to each of our members.

I wish you all a happy, healthy, and productive year of the snake.

Ming-Hui Chen
2013 President, ICSA
Professor
Department of Statistics
University of Connecticut

From the 2012 President, ICSA

Ivan S. F. Chan

Dear friends and ICSA members,

As the Crystal Ball drops at Times Square on New Year’s Eve, I have completed the one-year term as the President of ICSA. It has been an honor and a privilege to lead this great society and work with so many talented and devoted members, who have unselfishly contributed their time and efforts in serving ICSA in various capacities. I would like to take this opportunity to thank you for your trust and support throughout the year. In particular, I would like to thank our Executive Director, Shu-yen Ho, the Board of Directors, and the various ICSA committees for their wisdom and countless hours of efforts in serving the society.

ICSA has been making good progress toward improving its connection and influence in the international statistical community with growth in membership, quality of meeting organization, jour-
nal and book series publications, and collaboration with other societies. Here I briefly summarized a few key activities in 2012. The Applied Statistics Symposium in Boston, co-chaired by Tianxi Cai from Harvard University and Mingxiu Hu from Millennium, featured over 100 high-quality scientific sessions covering a wide range of topics and attracted more than 550 participants from academia, industry and government. The meeting was a big success, and I heard many positive comments from meeting attendees. In partnership with Springer, the first ICSA-Springer book series, with Jiahua Chen from University of British Columbia as the Editor-In-Chief, was established in May to publish books on different fields of statistics. This will expand the offering of ICSA publications together with the already successful journals, Statistics Sinica, Statistics in Biosciences, and Statistics and Its Interface. In June, ICSA established its first ever local chapter --- the Canadian Chapter, headed by Grace Yi of Waterloo University. With a diverse membership base and a strong organization, ICSA is ready to provide better service to members via local chapters and sections of special interests. During my trip to attend two ICSA-cosponsored meetings in China this past summer, I explored the potential of establishing an ICSA local chapter in China. Although there are some challenges, I hope this can be accomplished in the not so distant future.

At the JSM members meeting in San Diego, the recipients of the first Pao-Lu Hsu Award were announced: congratulations to Xiao-Li Meng from Harvard University, Jianqing Fan from Princeton University, and Bin Yu from University of California at Berkeley. This award recognizes their excellent scholarly accomplishments in statistical research as well as outstanding contributions to the development of sound statistics in Chinese communities. An official award ceremony with special presentations by the award recipients will be held at the ICSA International Conference in Hong Kong, December 20-23, 2013. I would like to thank the Award Committee, chaired by Xiaotong Shen of University of Minnesota, for their tireless efforts in making this happen.

In 2012, ICSA has cosponsored several international meetings including the JSM, the 2nd Joint Biostatistics Symposium in Beijing, and the International Pharmaceutical Statistics Workshop in Shanghai. ICSA has also joined many other societies to prepare for the celebration of the International Year of Statistics in 2013. In particular, planning is well underway for the first Joint Statistical Conference between ICSA and the International Society for Biopharmaceutical Statistics (ISBS) to be held from June 9–12, 2013 at the Bethesda North Marriott Hotel & Conference Center, Bethesda, Maryland, USA (http://www.icsa.org/2013/). ICSA is also collaborating with the International Biometric Society and will sponsor an invited session at the 2013 ENAR spring meeting in Orlando, Florida, March 10–13, 2013. The ICSA International Conference, to be held from December 20–23, 2013 in Hong Kong, will be cosponsored by the American Statistical Association (ASA), Royal Statistical Society, Institute of Mathematical Statistics (IMS), and International Society of Bayesian Analysis (ISBA). In addition, for the first time in history, an Industry Track will be added to the International Conference program to encourage participation of statisticians working in industry.

With your support, ICSA has accomplished a lot so far. But there are more to be done. I believe together we can make ICSA an even better society in the years ahead. We are very fortunate to have President Ming-Hui Chen and President-Elect Ying Lu lead our society going forward. Let’s give them our full support in our journey to a brighter future.

Happy New Year!

Ivan S. F. Chan
2012 President, ICSA
Executive Director
Late Development Statistics
Merck Research Laboratories
Dear ICSA Members,

Happy New Year!

I have enjoyed serving ICSA as Executive Director for the last two years and I am looking forward to continuing for the third year. Over the last year, we continued to succeed in growth, co-sponsoring, connecting with other statistical societies, and increasing our presence and influence in the global statistical community. It is worth noting that our first ICSA chapter >>> Canada Chapter was established in June, 2012 and their first event is being planned. We hope that more chapters and sections will be established as needed in the future. We now have started sending membership renewal e-mail reminders 3 weeks prior to individual membership expiration. When you receive those reminders, please take a moment to renew so that your membership benefits will not be discontinued or interrupted.

The 2012 second ICSA board meeting was held on July 29, 2012 in San Diego JSM. During this meeting, the board certified the 2012 election results that were subsequently announced at ICSA annual members meeting and posted on ICSA website. Also discussed were: new Biometrics Section proposal with a draft Bylaws, Canada Chapter update, approval of the new symposium treasurer (Hongliang Shi), symposium student travel award upgrade (up to 8 awards and up to $1,000 each), 2014 ICSA/KISS (Korean International Statistical Society) joint Applied Statistics Symposium, and new ideas on award and officer nomination procedures (more open, transparent, inclusive and diversified).

In June (9--12) 2013, the ICSA and ISBS (International Society for Biopharmaceutical Statistics) joint Applied Statistics Symposium will be held in Bethesda, Maryland with a strong scientific program, short courses, social events and evening banquet. We look forward to seeing you there, for program details please visit the ICSA website http://www.icsa.org.

Your support and participation of ICSA programs and activities is important for the continued success of ICSA. Again, I look forward to serving you for the third year and your ideas and suggestions will always be appreciated.

This year 2013, ICSA is joining ASA and many other statistical societies to celebrate the International Year of Statistics. So let us have a wonderful year of Statistics!

Shuyen Ho, Ph.D.
ICSA Executive Director (2011--13)
Director, Statistics and Programming
GlaxoSmithKline

Results of 2012 ICSA Election

2013 President-Elect

Ying Lu (Stanford University)
ylu1@stanford.edu

Directors of ICSA Board (2013--2015)

- Zhengjun Zhang (University of Wisconsin--Madison)
zjz@stat.wisc.edu
- Wenbin Lu (North Carolina State University)

Ying Lu (Stanford University)
ylu1@stanford.edu

- Yuan-Chin Ivan Chang (Academia Sinica, Taiwan)
ycchang@stat.sinica.edu.tw
- Haoda Fu (Eli Lilly)
  fu_haoda@lilly.com
- Ming-Dauh Wang (Eli Lilly)
wang_ming-dauh@lilly.com

2013 Biometrics Section Chair

Aiyi Liu (NIH)
liua@mail.nih.gov
ICSA 2013 Executives and Members of the Committees

EXECUTIVES

President: Ming-Hui Chen (2013)
Past President: Ivan S.F. Chan (2013)
President-elect: Ying Lu (2013)
Executive Director: Shu-Yen Ho (2011-2013)
Office of ICSA: Lili Yu, Jingxian Cai, Ruth Whittworth, Karl Peace, Jiann-Ping Hsu College of Public Health, Georgia Southern University, oicsa@icsa.org, Phone: (912) 478-1277.

BOARD of DIRECTORS


STANDING COMMITTEES

Program Committee
Zhezhen Jin (Chair, 2013)

Term of reference: (1) Recommend conference and symposium sites, including candidates for their Chairs. (2) Recommend general policy for all meetings, subject to approval by the Board of Directors. (3) Represent ICSA in the JSM Program Committee and coordinate ICSA activities at the JSM.

Finance Committee
Linda Yau (Chair 2013-2015)

Term of reference: (1) Manage three ICSA bank accounts (L. Yau, ICSA main account; H. Shi, ICSA Applied Statistics Symposium account; L. Kuo, ICSA J. P. Hsu Memorial Scholarship Fund account). (2) Oversee the budget and to recommend long-term financial planning and invest the Association’s assets, subject to approval by the Board of Directors. (3) Manage ICSA PayPal account for online credit card payment.

Nomination and Election Committee
Naitee Ting (Chair, 2013)

Term of reference: Nominate the candidates for President-elect and members of the Board of Directors.

Publication Committee
Keying Ye (Chair, 2013)
Liang Li (2012-2014), Frank Liu (2012-2014), Jun Yan (Editor of Bulletin), Xihong Lin (Co-Editor of SIB), Jose C. Pinheiro (Co-Editor of SIB), Hongyu Zhao (Co-Editor of SIB), Jeng-Min Chiou (Co-Editor of S. Sinica), Naisyin Wang (Co-Editor of S. Sinica), Qiwei Yao (Co-Editor of S. Sinica), Shu-Yen Ho (Ex-Officio).

Term of reference: Oversee the publication policy of the Association and make recommendations to the Board of Directors.

CURRENT COMMITTEES

Membership Committee
Fang K. Chen (Chair, 2013)
Term of reference: Recruit new members and contact interested potential individuals and organizations.

Awards Committee

Xiaotong Shen (Chair, 2011-2013)

Term of reference: Accept, evaluate, and recommend nominations for ICSA various awards.

ICSA IT Committee

Lixin (Simon) Gao (Chair, 2013-2015)
Don Sun, Ruth Whitworth.

2013 Applied Statistics Symposium Committee

Aiyi Liu (Co-chair), Yi Tsong (Co-chair)

Term of reference: Organize the Applied Statistics Symposium, June 9-12, 2013, Bethesda North Marriott Hotel & Conference Center, 5701 Marinelli Road, Bethesda, Maryland.

Book and Journal Donation Committee

Tar Timothy Chen (Chair).

Term of reference: Solicit book and journal donations and to arrange their delivery to universities or colleges in need.

Annual Meeting Committee (2013 JSM)

Xianming Tan (Chair).

Term of reference: Plan, coordinate and arrange the August annual meeting at the 2013 JSM in Montreal, Québec, Canada, Palais des congrès de Montréal, August 3 - 8, 2013.

ICSA Representative to JSM Program Committee


Term of reference: Represent ICSA in the JSM Program Committee, coordinate ICSA sponsored and co-sponsored sessions at JSM.

Archive Committee

Lili Yu (Chair, 2013), Smiley Cheng, Shein-Chung Chow, Nancy Lo.


BIOMETRICS SECTION

Aiyi Liu (Chair, 2013), Tianxi Cai (Past Chair, 2012).

Ad Hoc Committee on ICSA Sections: Formulating Structure and Governing Rules

J. Jack Lee (Chair), Tianxi Cai, Wei-Yann Tsai, Naitee Ting, Kai Fun Yu. Ex. Officials: Ivan Chan, Shu-Yen Ho.

Ad Hoc Committee Charges and Action Items:
1. Create a list and contact database for the Biometrics Section members. 2. Creating a file with the structure and governing rules of Sections. 3. Revive the function of the Biometrics Section.

Report From OICSA

Lili Yu

Dear ICSA members,

As the New Year approaches, we, at the office of ICSA, hope you have a happy and auspicious new year! In the past year, the ICSA achieved many important accomplishments and made great developments. I would like to take this opportunity to report some important office work and function during the past year.

The website for ICSA 2013 Applied Statistics Symposium / ISBS International Symposium on Biopharmaceutical Statistics Joint Meeting has been established on the ICSA web, http://www.icsa.org/2013/. It will be held from Sunday, June 9 to Wednesday, June 12, 2013, at the Bethesda North Marriott Hotel & Conference Center, 5701 Marinelli Road, Bethesda, Maryland, USA. This is the first time that the ICSA Applied Statistics Symposium is jointly held with other meetings, which will at-
tract more participants from industrial statisticians and many international statisticians as well as statisticians working in government and academia. The Keynote Speakers and Banquet Speakers are shown on the website as well as the announcement of the Invited Sessions, Short Courses and Student Awards. Please visit the website frequently to obtain more information about the joint meeting.

The Canada Chapter of ICSA was set up in 2012. The current personnel include the president Grace Yi and Treasurer Wendy Lou. Bylaws of Canada Chapter have been developed. More details can be found at http://icsa.org/home/Canada%20Chapter.html. It is an important milestone of the growth of the ICSA. Statisticians in Canada are welcome to join the Canada Chapter to become a member of ICSA. We will update the website as more information is available.

We observed that many Bulletins mailed to our current members have been returned to the office due to incorrect mailing addresses. Therefore, we remind ICSA members to update their contact information timely. To update your information, please go to the Members Only Area http://icsa.org/a/member/m_login.jsp. Then use your registered email address to login to your account. Follow the tab there if you forgot your password. If you forgot your registered email address, please contact us for it. In addition to updating the information, you can access two ICSA journals - Statistica Sinica and Statistics in Biosciences after you login. We hope all members provide us correct information, so that you can be better served.

To provide excellent service to all members, the office of ICSA would like to hear any suggestions or ideas on improving the work and functionality of the office. Please feel free to contact and discuss with us any issues you may have related to the office work.

Lili Yu
OICSA
Assistant Professor
Department of Biostatistics
Jiann-Ping Hsu College of Public Health
Georgia Southern University

ICSJA Banquet at JSM 2012, San Diego

Ronghui (Lily) Xu

The annual ICSA members meeting was held on August 1, 2012, at the JSM in San Diego, CA. Several awards were given or announced at the meeting (see photos). Following the meeting about 170 members were transported to the Jasmine Chinese Seafood Restaurant, which is located in the heart of the local Asian business area on Convoy Street. As an appreciation of the statistics graduate student and staff volunteers from the University of California, San Diego, who worked at the ICSA desk during the JSM, the volunteers were treated as guests at the banquet. Following a delicious 8-course meal, award recipients Professor Howell Tong and Professor Xiao-Li Meng each gave a speech. Professor Howell Tong’s family from UK were also present at the banquet. Following that, lifetime member of ICSA, Professor Marvin Zelen from Harvard University, and Professor David DeMets from University of Wisconsin, Madison, also each gave a speech. Marvin recalled his first visit to China in the 1970s.

The banquet ended with solo vocal by Aiyi Liu from the National Institutes of Health (NIH). The whole planning and hosting of the banquet had the full support of, among others, Ivan S.F. Chan, Shu-Yen Ho, and Ying Lu from the ICSA office.

Ronghui (Lily) Xu, Ph.D.
2012 JSM Local Chair, ICSA
Professor of Mathematics and Family and Preventive Medicine
University of California, San Diego

On behalf of the Local Organizing Committee Chair: Ronghui Xu; Treasurer: Dongrui (Ray) Lu (Pfizer); Volunteers: Priscilla Chan, Anqi Cheng, Walter Faig, Gordon Honerkamp-Smith, Jennifer Luo, Siena Ma, Rosanna Overholser, Yuqin Wei, Ning Zhao.
## International Chinese Statistical Association
### Profit and Loss
**July 1, 2012 through December 31, 2012**

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<th>Description</th>
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<td>Statistica Sinica (22-1, 22-2, 22-3, &amp; 22-4)</td>
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<td><strong>Total Postage and Delivery</strong></td>
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<td>1400 ICSA Bulletins</td>
<td>$4,068.75</td>
</tr>
<tr>
<td><strong>Total Postage, Printing, and Reproduction</strong></td>
<td>$8,536.29</td>
</tr>
<tr>
<td><strong>Total Expense</strong></td>
<td>$17,605.36</td>
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<tr>
<td><strong>Net Other Income</strong></td>
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<tr>
<td>Interest income from CD</td>
<td>Mature 7/1/2013</td>
</tr>
<tr>
<td><strong>Net Income</strong></td>
<td>$9,411.16</td>
</tr>
</tbody>
</table>
International Chinese Statistical Association
Balance Sheet
July 1, 2012 through December 31, 2012

<table>
<thead>
<tr>
<th>ASSETS</th>
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</thead>
<tbody>
<tr>
<td>Checking/Savings</td>
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</tr>
<tr>
<td>Checking</td>
<td>$90,258.67</td>
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<tr>
<td>CD</td>
<td>$51,736.30</td>
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<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td><strong>$141,994.97</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>LIABILITIES &amp; EQUITY</th>
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<tbody>
<tr>
<td>Equity</td>
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</tr>
<tr>
<td>Opening Balance July 1, 2012 of ICSA</td>
<td>$132,583.81</td>
</tr>
<tr>
<td>July 1 – Jan. 2.2013 Net Income</td>
<td>$9,411.16</td>
</tr>
<tr>
<td><strong>Total Equity</strong></td>
<td><strong>$141,994.97</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL LIABILITIES &amp; EQUITY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$141,994.97</strong></td>
<td></td>
</tr>
</tbody>
</table>

Kynn Kuo
Treasurer (2010–2012), ICSA
Professor
Department of Statistics
University of Connecticut

Report from the Program Committee

Zhezhen Jin

ICSA Program Committee

The Chair of 2013 program committee is Zhezhen Jin (zj7@columbia.edu). The members are:

- Tianxi Cai (tcai@hsph.harvard.edu)
- Jeng-Min Chiu (jmchiou@stat.sinica.edu.tw)
- Annie Qu (anniequ@illinois.edu)
- Dongseok Choi (choid@ohsu.edu)
- Aiyi Liu (liua@mail.nih.gov)
- Yi Tsong (yi.tsong@fda.hhs.gov)
- Bin Nan (bnan@umich.edu)
- Lixing Zhu (lizhu@hkbu.edu.hk)
- Mingxiu Hu (Mingxiu.Hu@MPI.com)
- Qingxia (Cindy) Chen (cindy.chen@vanderbilt.edu)
- Lu Tian (lutian@stanford.edu)

Past Events Since July 2012

The 2012 JSM took place in July 29 - August 2, 2012 at San Diego, California. The ICSA member meeting and the annual banquet were held on August 1st at the Jasmine Seafood Restaurant. We thank Professor Ronghui (Lily) Xu, UCSD Biostatistics and graduate student and staff volunteers for their excellent organization of the event.
Year 2013

The 2013 ENAR annual meeting will have a special session organized by the ICSA. It is titled “Statistical Methods for Next Generation Sequence Data Analysis: A special session for the ICSA journal Statistics in BioSciences” organized by Professor Hongyu Zhao with 4 speakers: Professor Xihong Lin, Professor Kathryn Roeder, Professor Sunduz Keles and Professor Matthew Stephens.

The 22nd ICSA 2013 Applied Statistical Symposium will be held from Sunday, June 9 to Wednesday, June 12, 2013 in Bethesda, MD. It will be a joint conference with the International Society for Biopharmaceutical Statistics (ISBS). Drs. Yi Tsong (yi.tsong@fda.hhs.gov) and Aiyi Liu (liua@mail.nih.gov) are the Chairs of the ICSA organization committee.

The 2013 JSM will take place in August at Montréal, Québec, Canada. It will have two ICSA sponsored invited sessions, one titled “Emerging Methodological Issues in Population-Based Chronic Disease Research” organized by Professor Jianwen Cai and the other titled “Show Case of Analysis of Correlated Measurements” organized by Professor Naisyin Wang. In JSM, there will also be an ICSA member meeting and a banquet, Dr. Xianming Tan (xianming.Tan@clinepi.mcgill.ca) at McGill University is the Chair for the local committee.

The 9th ICSA International Conference will be held from December 20 to December 23, 2013 in at Lam Woo International Conference Centre, Hong Kong Baptist University in Hong Kong, which will be co-sponsored by the ASA, RSS, IMS and ISBA. For more details, please contact Professor Lixing Zhu (lzhu@hkbu.edu.hk).

The ICSA Canadian chapter has been formally founded on June 23rd, 2012. The first symposium of the ICSA-Canada Chapter will take place on August 2, 2013 in Toronto, Canada, please see a separate report from Professor Grace Yi (yyi@uwaterloo.ca) for details in this bulletin.

Year 2014

The 23rd ICSA 2014 Applied Statistical Symposium will be held from Sunday, June 15 to Wednesday, June 18, 2013 at Portland Marriott Downtown Waterfront in Portland, OR. It will be a joint conference with the Korean International Society for Statistics (KISS). Drs. Dongseok Choi (choi@ohsu.edu) and Rochelle Fu (fur@ohsu.edu) are the Chairs of the organization committee.

Year 2015

ICSA 2015 Applied Statistical Symposium will be held joint with Graybill Conference in Fort Collins, Colorado from Sunday, June 14 to Wednesday, June 17, 2015. If you would like to help, please contact Drs. Naitee Ting (Naitee.Ting@boehringer-ingelheim.com) or Professor Haonan Wang (wanghn@stat.colostate.edu).

The 10th ICSA International Conference will take place in Hainan, China. If you would like to help, please contact Dr. Junfang Li and Dr. Naitee Ting.

If you would like to have ICSA co-sponsorship for statistical conferences and meetings, please use the website http://www.icsa.org/meetings/co-sponsorship/index.html to submit your application for co-sponsorship.

If you have comments and suggestions on ICSA programs, please send your inputs to Professor Zhezhen Jin (zj7@columbia.edu).

Zhezhen Jin, Ph.D.,
Chair, ICSA Program Committee
(2013)
Associate Professor of Biostatistics
Department of Biostatistics
Columbia University

The Birth of the First Chapter of ICSA: ICSA-Canada Chapter

Grace Yi

I am delighted to report the formation of the first chapter of the International Chinese Statistical Association: ICSA-Canada Chapter. The establishment of this chapter was announced on June
23, 2012 at the ICSA Board meeting in Boston. Its first Executive Committee consists of Grace Yi (President), Wendy Lou (Treasurer/Secretary), Jiahua Chen, James Fu and Jack Lee.

The objective of this organization is to promote statistics and its application. The Chapter aims to engage in various professional activities, including but not limited to holding meetings, encouraging interaction among researchers and fast dissemination of information, participating in educational efforts, promoting application of statistics, and raising awareness of statistics to the society.

The ICSA-Canada Chapter will provide opportunities through membership to connect scholars, researchers, analysts and students who share interest in statistical sciences and their applications. The ICSA-Canada Chapter sincerely welcomes new membership, and it is open to everyone.

To celebrate the launch of the ICSA-Canada Chapter and the International Year of Statistics, the Executive Committee proudly organizes the first symposium which will be held on Aug. 2–3, 2013 in Toronto at The Westin Harbour Castle Toronto Hotel (http://www.westinharbourcastletoronto.com/). The hotel is located on the vibrant waterfront of Lake Ontario and features refreshing accommodations in Canada’s largest city. It is easily accessible from the two airports (Pearson and City Island) and is close to many local attractions.

The symposium will be featured by both invited talks and contributed posters, together with a banquet for the evening of Aug 2. We are proud to have the following confirmed speakers:

- Chen, Jiahua (University of British Columbia)
- Chen, Minghui (University of Connecticut)
- Dean, Charmaine (University of Western Ontario)
- Evans, Michael (University of Toronto)
- Leger, Christian (Universite de Montreal)
- Lin, Xihong (Harvard School of Public Health)
- Meng, Xiaoli (Harvard University)
- Rivest, Louis-Paul (Universite Laval)
- Wang, Jane-Ling (UC Davis)
- Wang, Naisyin (University of Michigan)
- Zhang, Heping (Yale School of Public Health)
- Lin, Dennis (Penn State, Banquet speaker)

The banquet dinner will be arranged in Pearl Harbourfront Restaurant (http://www.pearlharbourfront.ca/). Details of the registration and program information will be available at the ICSA website.

Finally, looking back retrospectively, I would like to take this moment to share some anecdotes. The initial thought of creating this chapter came up during the conversation with Dr. Minghui Chen at the 2011 ICSA meeting. It was observed that a good number of Canadian statisticians regularly participated in ICSA meetings as regular ICSA members. In addition, some of those non-ICSA Canadian statisticians occasionally participated in ICSA meetings. Creating a Canada Chapter for ICSA may serve as a viable venue to attract more Canadian statisticians and students to participate in various ICSA activities, and this can help strengthen professional connection between the ICSA and the SSC (Statistical Society of Canada) as well.

I am grateful to Drs. Minghui Chen and Naisyin Wang for their encouragements to hit my first stride: working on a proposal of establishing the first chapter of the ICSA. I would like to thank the board members for their feedback and comments on forming the proposal of establishing the chapter, and ultimately for their favourable approval. Thanks are also extended to Drs. Ivan Chan and Yeh-Fong Chen for their careful comments which ensure the compliance of the proposal with the ICSA constitution and by-laws. I am particularly obliged to Dr. Shuyen Ho for his valuable input and advice throughout the entire process. It is fair to say that the birth of the ICSA-Canada chapter would not have been possible without the generous help it has received. I am tremendously thankful to Wendy Lou, Jiahua Chen, James Fu and Jack Lee. Without their passion and commitments, it will be difficult to see a healthily growing Chapter. Most importantly, the Chapter can only grow with the nurturing from all of you. We look forward to the strong support to the ICSA-Canada Chapter from all of you in the coming years.

Grace Yi
President, ICSA--Canada Chapter
Professor
University Research Chair
Department of Statistics and Actuarial Science
University of Waterloo
New Papers in ICSA Journals

Statistica Sinica

Statistica Sinica endeavors to meet the needs of statisticians faced with a rapidly changing world. It publishes significant and original articles that promote the principled use of statistics along with related theory and methods in quantitative studies, essential to modern technologies and sciences. It is published quarterly in January, April, July and October.

Volume 23, Number 1, January 2013


Functional data analysis for point processes with rare events  
Shuang Wu, Hans-Georg Muller and Zhen Zhang

Functional linear model with zero-value coefficient function at sub-regions  
Jianhui Zhou, Nae-Yuh Wang and Naisyin Wang

Shrinkage estimation and selection for multiple functional regression  
Heng Lian

Multivariate spatial nonparametric modelling via kernel processes mixing  
Montserrat Fuentes and Brian Reich

The Lasso under Poisson-like heteroscedasticity  
Jin Zhu, Karl Rade and Bin Yu

Generalized double pareto shrinkage  
Artin Armagan, David B. Dunson and Jaeyong Lee

Variable selection for censored quantile regression  
Huixia Judy Wang, Jianhui Zhou and Yi Li

Bayesian asymptotics with misspecified models  
Pierpaolo De Blasi and Stephen G. Walker

Nonparametric endogenous post-stratification estimation  
Mark Dahlke, F. Jay Breidt, Jean D. Opsomer and Ingrid Van Keilegom

Estimation of multivariate means with heteroscedastic errors using envelope models  
Zhihua Su and R. Dennis Cook

Power and sample size calculations for generalized estimating equations via local asymptotics  
Zhigang Li and Ian W. McKeague

Quasi-maximum exponential likelihood estimators for a double AR(p) model  
Ke Zhu and Shiqing Ling

Efficient estimation in panel data partially additive linear model with serially correlated errors  
Jinhong You and Xian Zhou

Optimal R-estimation of a spherical location  
Christophe Ley, Yvik Swan, Baba Thiam and Thomas Verdebut

Empirical Bayes in the presence of explanatory variables  
Noam Cohen, Eitan Greenshtein and Ya'acov Ritov

Augmented estimating equations for semiparametric panel count regression with informative observation times and censoring time  
OXiaoqing Wang, Shuangge Ma and Jun Yan

A frailty model approach for regression analysis of bivariate interval-censored survival data  
Chi-Chung Wen and Yi-Hau Chen

Detection with the scan and the average likelihood ratio  
Hock Peng Chan and Guenther Walther
On convergence of recursive Monte Carlo filters in non-compact state spaces
Jing Lei and Peter Bickel

Construction of nested (nearly) orthogonal designs for computer experiments
Jun Li and Peter Z. G. Qian

Volume 22, Number 4, October 2012


Minimax Estimation of Large Covariance Matrices under L1-Norm
T. Tony Cai and Harrison H. Zhou

Comments
Lingzhou Xue and Hui Zou
Tingni Sun and Cun-Hui Zhang
Philippe Rigollet and Alexandre B. Tsybakov
Peter J. Bickel, Elizaveta Levina, Adam J. Rothman, and Ji Zhu
Wei Biao Wu
Ming Yuan

Rejoinder
T. Tony Cai and Harrison H. Zhou

Semiparametric Quantile Regression with High-dimensional Covariates
Liping Zhu, Mian Huang and Runze Li

Semiparametric Regression Pursuit
Jian Huang, Fengrong Wei and Shuangge Ma

A Direct Semiparametric Receiver Operating Characteristic Curve Regression with Unknown Link and Baseline Functions
Huazhen Lin, Xiao-Hua Zhou, and Gang Li

Jackknife Empirical Likelihood Based Confidence Intervals for Partial Areas Under ROC Curves
Gianfranco Adimari, Monica Chiogna

Oracle Model Selection for Nonlinear Models Based on Weighted Composite Quantile Regression
Xuejun Jiang, Jiancheng Jiang, and Xinyuan Song

Model Selection for High Dimensional Multi-sequence Change-point Problems
Nancy R. Zhang, David O. Siegmund

Moment-based Method for Random Effects Selection in Linear Mixed Models
Mihye Ahn, Hao Helen Zhang, Wenbin Lu

Variable Selection for High-dimensional Generalized Varying-Coefficient Models
Heng Lian

Quantile Tomography: Using Quantiles with Multivariate Data
Linglong Kong and Ivan Mizera

Sufficient Dimension Reduction in Regression with Missing Predictors
Liping Zhu, Tao Wang and Lixing Zhu

Outlier Detection and Trimmed Estimation for General Functional Data
Daniel Gervini, Nancy R. Zhang, David O. Siegmund

On the Computation of Autocovariances for Generalized Gegenbauer Processes
Tucker McElroy and Scott Holan

Stimating the Proportion of True Null Hypotheses Under Dependence
Irina Ostrovnaya and Dan L. Nicolae

A Generalization of the Neyman-Scott Process
Chun Yin Yau, Ji Meng Loh

A Test for Stationarity of Spatio-temporal Random Fields on Planar and Spherical Domains
Mikyoung Jun and Marc G. Genton

On Locally Optimal Designs for Generalized Linear Models with Group Effects
John Stufken and Min Yang
Statistics in Biosciences (SIB) is published twice a year in print and electronic form. It aims at development and application of statistical methods and their interface with other quantitative methods, such as computational and mathematical methods, in biological and life science, health science, and biopharmaceutical and biotechnological science.

Volume 4, Number 2, May 2012

Stepwise Paring down Variation for Identifying Influential Multi-factor Interactions Related to a Continuous Response Variable

Jing-Shiang Hwang, Tseuy-Hwa Hu

A Semi-nonparametric Approach to Joint Modeling of A Primary Binary Outcome and Longitudinal Data Measured at Discrete Informative Times

Song Yan, Daowen Zhang, Wenbin Lu, James A. Grifo

Combined Estimation of Treatment Effects Under a Discrete Random Effects Model

K. K. Gordon Lan, José Pinheiro.

Local Mixed-Effects Fitting for Detecting Reproductive Hormone Surge Times

Jian Kang, Wen Ye, Lu Wang, Almudena Veiga-Lopez

Joint Models of Longitudinal Data and Recurrent Events with Informative Terminal Event

Sehee Kim, Donglin Zeng, Lloyd Chambless, Yi Li

Analysis for temporal gene expressions under multiple biological conditions

Hong-Bin Fang, Dianliang Deng, Guo-Liang Tian, Lixin Shen

Joint Analysis of Gene Expression Data and Gene Functional Annotations

Xinlei Wang, Min Chen, Arkady B. Khodursky, Guanghua Xiao

Multivariate Gene Selection and Testing in Studying the Exposure Effects on a Gene Set

Tamar Sofer, Arnab Maity, Brent Coull, Andrea A. Baccarelli

Statistics and Its Interface is an international statistical journal promoting the interface between statistics and other disciplines including, but not limited to, biomedical sciences, geosciences, computer sciences, engineering, and social and behavioral sciences. The journal publishes high-quality articles in broad areas of statistical science, emphasizing substantive problems, sound statistical models and methods, clear and efficient computational algorithms, and insightful discussions of the motivating problems.

Volume 5, Number 4, 2012

Statistical performance of group sequential methods for observational post-licensure medical product safety surveillance: A simulation study

Shanshan Zhao, Andrea Cook, Lisa Jackson and Jennifer Nelson

An adaptive design for case-driven vaccine efficacy study when incidence rate is unknown

Xiaoming Li, Ivan S. F. Chan and Keaven M. Anderson

Doubly adaptive biased coin designs for balancing competing objectives in time-to-event trials

Oleksandr Sverdlov, Yevgen Ryeznik and Weng Kee Wong
New Papers from ICSA Journals

Futility stopping in clinical trials  
Pei He, Tze Leung Lai and Olivia Y. Liao

Predicting acute hypotensive episodes from ambulatory blood pressure telemetry  
Kun Jin and Norman Stockbridge

Adaptation in clinical development plans and adaptive clinical trial designs  
Tze Leung Lai, Olivia Yueh-Wen Liao and Ray Guangrui Zhu

A new non-inferiority test based on Bayesian estimation in matched-pairs design  
Weiquan Chen and Hua Jin

A phase I dose-finding study based on polychotomous toxicity responses  
Xiaobin Yang and Keying Ye

Efficient designs for phase II oncology trials with ordinal outcome  
Anastasia Ivanova, Jane Monaco and Thomas Stinchcombe

Type I error for a chi-square test when the response probability changes during a trial  
Feifang Hu, Jiandong Lu and Feng Tai

Robust inference for longitudinal data analysis with non-ignorable and non-monotonic missing values  
Chi-hong Tseng, Robert Elashoff, Ning Li and Gang Li

Volume 5, Number 3, 2012

http://www.intlpress.com/SII/SII-vol-5.php#SII-5-3

Special issue - Empirical Likelihood

Adjusted empirical likelihood with high-order one-sided coverage precision  
Jiahua Chen and Yukun Liu

Jackknife empirical likelihood method for case-control studies with gene-environment independence on controls  
Bing-Yi Jing, Zhouring Li, Jing Qin and Wang Zhou

Blockwise empirical likelihood for spatial Markov model assessment  
Mark S. Kaiser and Daniel J. Nordman

Imputation-based empirical likelihood inference for the area under the ROC curve with missing data  
Binhuan Wang and Gengsheng Qin

On the Mahalanobis-distance based penalized empirical likelihood method in high dimensions  
S. N. Lahiri and S. Mukhopadhyay

Empirical likelihood ratio confidence intervals for conditional survival probabilities with right censored data  
Jian-Jian Ren and Tonya Riddlesworth

Empirical likelihood inference for two-sample problems  
Changbao Wu and Ying Yan

Empirical likelihood methods based on influence functions  
Ming Zheng, Ziqiang Zhao and Wen Yu

Empirical likelihood in some nonparametric and semiparametric models  
Liugen Xue and Lixing Zhu
2012 ICSA Awards

Distinguished Achievement Award

This award honors individuals for their outstanding service to the Association. It recognizes work that has facilitated or served as a model for the work of others in promoting the mission of the ICSA.

Howell Tong  Ph.D., Emeritus Professor, London School of Economics.

Dr. Howell Tong (born 1944 in Hong Kong) is a statistician, working mainly but not exclusively in the fields of nonlinear time series analysis and chaos. From October 1, 2009, he is an Emeritus Professor at the London School of Economics and was twice (2009, 2010) holder of the Saw Swee Hock Professorship of Statistics at National University of Singapore. He has been a Distinguished Visiting Professor of Statistics at the University of Hong Kong since 2005.

Tong went to England initially to study in 1961. He got his Bachelor of Science (1966, with first class honours), Master of Science (1969) and Doctor of Philosophy (1972) all from the University of Manchester Institute of Science and Technology (UMIST) where he studied with Maurice Priestley. Tong remained in UMIST first as a lecturer and then as a senior lecturer. While in Manchester, he started his married life with Mary. In 1982, he moved to the Chinese University of Hong Kong where he was the founding Chair of Statistics. Four years later, he returned to England to be Chair of Statistics (as the first Chinese to hold a chair of statistics in the UK) at the University of Kent at Canterbury until 1999. From 1999 to September 2009, Tong was a Chair of Statistics at the London School of Economics. Between 1997 and 2004, Tong was also concurrently Chair of Statistics and sometime Pro-Vice Chancellor and Founding Dean of the Graduate School, University of Hong Kong.

Tong was elected a Fellow of the Institute of Mathematical Statistics in 1993, an Honorary Fellow of the Institute of Actuaries, England in 1999, and a Foreign Fellow of the Norwegian Academy of Science and Letters in 2000. He won the State Natural Science Prize, China in 2000. The Royal Statistical Society, UK, awarded him their Guy Medal in Silver in 2007 in recognition of his “... many important contributions to time series analysis over a distinguished career and in particular for his fundamental and highly influential paper ‘Threshold autoregression, limit cycles and cyclical data’, read to the Society in 1980, which paved the way for a major body of work in non-linear time series modelling.”

Tong has two children: Simon and Anna, who are both Googlers.

Jun Liu  Ph.D., Professor, Harvard University.
Dr. Jun Liu is Professor of Statistics at Harvard University, with a joint appointment in the Harvard School of Public Health. He is a Changjiang Scholar at Peking University, and also Guest Professor at Tsinghua University. Dr. Liu received his BS degree in mathematics in 1985 from Peking University and Ph.D. in statistics in 1991 from the University of Chicago. He held Assistant, Associate, and full professor positions at Stanford University from 1994 to 2003. In 1995, Dr. Liu won the NSF CAREER Award and the Stanford Terman fellowship. In 2000, he won the Mitchell Award for the best statistics application paper. In 2002, he received the prestigious COPSS Presidents’ Award (given annually and jointly by five leading statistical associations to one individual under age 40). In 2010, he was awarded the Morningside Gold Medal in Applied Mathematics (honored once every 3 years to an individual of Chinese descent under age 45). He was selected as a Medallion Lecturer by the Institute of Mathematical Statistics (IMS) in 2002, as a Bernoulli Lecturer in 2004, and as a Kuwait Lecturer by Cambridge University in 2008. He was elected to Fellow of the IMS in 2004 and Fellow of the American Statistical Association in 2005. He served on numerous grant review panels of the NSF and NIH (a permanent member of NIH study section GCAT) and editorial boards of numerous leading statistical journals. He is now a co-editor of the Journal of the American Statistical Association.

Dr. Liu and his collaborators introduced the statistical missing data formulation and Gibbs sampling strategies for biological sequence analysis in early 1990s. The resulting algorithms for biological sequence analysis, gene regulation analysis, and genetic studies have been adopted by many research groups and become standard tools for computational biologists. Dr. Liu has also made fundamental contributions to statistical computing and modeling. He pioneered sequential Monte Carlo methods. His studies of Markov chain Monte Carlo algorithms have had a broad impact on both theoretical understandings and practical applications. Dr. Liu has published one research monograph and more than 130 research articles in leading scientific journals, and is one the ISI Highly Cited mathematicians.

**Outstanding Service Award**

**Jing-Shiang Hwang**  Ph.D., Research Fellow, Institute of Statistical Science, Academia Sinica, Taiwan

Dr. Jing-Shiang Hwang is a Distinguished Research Fellow of the Institute of Statistical Science, Academia Sinica. He is also a faculty member of the Institute of Public Health at National Yang-Ming University in Taiwan. He received his PhD in Statistics from Harvard University (1992). He was Assistant (1993-1998), Associate (1998-2002) and Full Research Fellow (2002-2012) at Academia Sinica. He has been working on applied statistics and had significant contributions in environmental health researches and methods for cost-effectiveness analysis. He served as the Deputy Director of the Institute for seven and a half years (2004-2008, 2009-2012). He worked with Professors Peter Hall and Kung-Yee Liang as the co-editors of Statistica Sinica (2008-2011).

**President's Citation**

**Karl E. Peace**  Ph.D., Professor, Jiann-Ping Hsu College of Public Health (JPHCOPH), Georgia Southern University

Dr. Karl Peace is a senior research scientist and professor of biostatistics in the Jiann-Ping Hsu College of Public Health (JPHCOPH), he holds a Ph.D. in biostatistics from the Medical College of Virginia, an M.S. in mathematics from Clemson University,
a B.S. in chemistry from Georgia Southern College and a Health Science Certificate from Vanderbilt University.

Peace’s first career was that of teaching and research at the university level at Georgia Southern, Clemson University, Virginia Commonwealth University and Randolph-Macon College. He holds or has held adjunct appointments at the Medical College of Virginia, the University of Michigan, Temple University, the University of North Carolina and Duke University.

His second career was in research, technical support and management in the pharmaceutical industry. He held the positions of senior statistician at Burroughs-Wellcome, manager of clinical statistics at A.H. Robins, director of research statistics at SmithKline and French Labs, senior director of GI Clinical Studies at G.D. Searle, and vice president of worldwide technical operations at Warner Lambert/Parke-Davis. He then founded Biopharmaceutical Research Consultants, Inc. (BRCI), where he held the positions of president, chief executive officer and chief scientific officer.

He is or has been a member of several professional and honorary societies, including the American Public Health Association, the American Statistical Association, the Drug Information Association, the Regulatory Affairs Professional Society, the Biometric Society, Technometrics, the American Society for Quality Control, Biometrika, and Kappa Phi Kappa. He is a past member of the Committee on Applied and Theoretical Statistics, National Research Council, National Academy of Science.

He is the recipient of numerous other citations and awards including: 1. 2012 University System Board of Regents’ Hall of Fame Award, 2. Fellow of the American Statistical Association, 3. First President’s Medal for outstanding contributions to Georgia Southern University, 4. Georgia Cancer Coalition Distinguished Cancer Scholar, 5. Several distinguished meritorious service awards, 6. Several distinguished alumni awards from the Medical College of Virginia and Georgia Southern University, 7. Deen Day Smith Humanitarian Award, 8. Tito Majaries Lifetime Achievement Award from the Philippine Statistical Association, and 9. Award for outstanding research and scholarly contributions from Georgia Southern University.

In addition his contributions to Education, Public Health and Drug Development have been cited by both the GA and US Houses of Representatives, and the American Statistical Association recently created the Karl E. Peace Award for Outstanding Statistical contributions for the Betterment of Society.

Dr. Peace is a reviewer or editor of several journals and is the founding editor of the Journal of Biopharmaceutical Statistics, now in its 22th year. He has contributed heavily to the medical, scientific and statistical literature by authoring or co-authoring over 150 articles and 10 books. He has been Chair of: the Biostatistics Subsection of the Pharmaceutical Manufacturers Association (PMA), the Biopharmaceutical Section of the ASA, the Training Committee of the PMA Biostatistics Subsection, and Chair of the Statistics Section of the APHA.

Peace has a lengthy record of philanthropy to education. He has created 21 endowments at five institutions. Fourteen of these are at Georgia Southern, including five for students from his native Baker County, Ga. Additionally at Georgia Southern, Peace endowed the JPHCOPH — the first school of public health in the University System of Georgia — and the (first) Eminent Scholar Chair in Biostatistics. He founded the Karl E. Peace Center for Biostatistics and the Karl E. Peace Public Health Library, and brought the Central Office of the International Chinese Statistical Association to the JPHCOPH. Peace is also Founder and Chair of the internationally renowned Biopharmaceutical Applied Statistical Symposium (BASS) — which generates funds to support graduate work in Biostatistics.
Pao-Lu Hsu Award

Congratulations to Dr. Xiao-Li Meng from Harvard University, Jianqing Fan from Princeton University, and Bin Yu from University of California at Berkeley for being the first recipients of the Pao-Lu Hsu Award.

This award recognizes their excellent scholarly accomplishments in statistical research as well as outstanding contributions to the development of sound statistics in Chinese communities. An award announcement was made at the Members meeting during JSM in San Diego in August 2012. An official award ceremony with special presentations by the award recipients will be held at the ICSA International Conference in Hong Kong, December 20-23, 2013.

The Pao-Lu Hsu Prize is presented every three years by the International Chinese Statistical Association (ICSA), usually at an ICSA conference, to an individual under the age of 50, who makes influential and fundamental contributions to any field of statistics and probability, and exemplifies Hsu’s deep involvement in developing statistics and probability research with significant impact on education.

Hsu, who was born in 1910, was a pioneer and founder of the newly formed discipline of statistics and probability in China. Hsu was best known for his rigorous research with depth and breadth, and for his profound impact on younger generations. He became the first professor of statistics and probability, Beijing University, in 1940. In 1948, he was elected to the very first class of Academicians of the Chinese Academy of Sciences. He published about 40 articles; see “Pao-Lu Hsu Memorial Collection” published by Peking University Press for more details. The ICSA Bulletin published two articles to the memory of Professor Pao-Lu Hsu in the 2012 July issue.

The prize is open to all nationalities. Priorities are given to the candidates whose work contributes greatly to the research and education of Chinese statisticians. The award recipient will speak at an ICSA International Conference. The award includes $3000 in cash prize.

People News

Xiaoli Meng Named Dean of the Graduate School of Arts and Sciences, Harvard University

Dr. Xiao-Li Meng, the Whipple V. N. Jones Professor and the chair of the Department of Statistics at Harvard University, has been named dean of the Graduate School of Arts and Sciences, Harvard University, effective August 15, 2012. In the announcement, Xiao-Li was noted for his scholarly breadth, pedagogical innovation, and dedication to professional development for graduate students. Details of the announcement are given at http://www.gsas.harvard.edu/news/xiao-li-meng-named-gsas-dean.php. Congratulations again Xiao-Li!
A Conversation with Jianqing Fan

Yang Feng and Xin Tong

Jianqing Fan is Frederick L. Moore Professor of Finance at Bendheim Center for Finance, Chairman of Department of Operations Research and Financial Engineering, and Director of Committee of Statistical Studies at Princeton University, where he also directs both financial econometrics and statistics labs. He was the past president of the Institute of Mathematical Statistics and International Chinese Statistical Association. He is co-editing *Journal of Econometrics* and *Econometrical Journal*, and is an associate editor of *Econometrica* and *The Journal of American Statistical Association*, and was the co-editor of *The Annals of Statistics* and an editor of *Probability Theory and Related Fields*. After receiving his Ph.D. from the University of California at Berkeley, he has been appointed as assistant, associate, and full professor at the University of North Carolina at Chapel Hill (1989-2003), professor at the University of California at Los Angeles (1997-2000), professor and chairman at Chinese University of Hong Kong (2000-2003), and professor at the Princeton University (2003--). His published work on statistics, economics and finance has been recognized by the 2000 COPSS Presidents’ Award, the 2007 Morningside Gold Medal of Applied Mathematics, ICSA Distinguished Achievement Award in 2008, Guggenheim Fellow in 2009, the inaugural ICSA Pao-Lu Hsu Award in 2012, and election to Academician of Academia Sinica and fellow of American Associations for Advancement of Science, Institute of Mathematical Statistics, and American Statistical Association.

On Nov 23rd, 2012, in Sherred Hall at Princeton University, Jianqing Fan was interviewed by his former students Yang Feng and Xin Tong. The transcript of this interview is presented below.

Early Life/Education (Before Phd)

*Interviewers*: Thanks for agreeing to have this interview. Let’s start from your childhood. You grew up in a special period of China. Can you briefly describe your life before college? Any interesting experience?

*Fan*: Well, this was a long time ago. It is very difficult to recollect. You are right; I was raised during the cultural revolution. At that time, most places did not value education. We did not even think about what to do after high school. As for college, few people had the luck, or even thought about it, since strong recommendations (based on non-academic factors) were needed. But I was fortunate to graduate two years after the end of cultural revolution, and took the college entrance exam.

*Interviewers*: When did you find out you were gifted in mathematics?

*Fan*: I would never say that I’m gifted in mathematics. But interestingly, people always puzzle why I was usually better than others when taking exams. When we went to school, we did not have any homework. One of the teachers was my neighbor, and he speculated that I paid more attention than other kids, which was probably not true, as I still have trouble concentrating during seminars. In any case, I have never associated myself with anything like gifted.

*Interviewers*: For college, were there other options besides Fudan?

*Fan*: This is actually a very interesting question. Math and Fudan could be one realization of a random walk. I could have applied for Peking or Tsinghua University. But spending all my fifteen years in the south, Beijing was way too cold for me, and most people including my family were too poor to buy necessary clothing. I heard that people in the north eat only grains rather than rice. Also, Beijing was very far from home (Fujian province). These are the three main reasons (I did not go to Beijing). And just like many other kids, I was inspired by the magics of physics. One wish was to go to National University of Defense Technology, hoping to make some significant impact. But people told me my family background was not good enough (to be politically trustworthy). We didn’t have much information like today. Math, physics, and chemistry were the default choices for top students. In addition, Shanghai was way advanced than remaining parts of the country. So I ended up in Fudan studying mathematics.
Interviewers: In retrospect, you were in the college class that is perhaps the best in recent Chinese history. How did this collection of highly intellectual people interact? What kind of impact did they have on you?

Fan: The Chinese colleges in my time were far more selective than they are now. There were only 20 people admitted by Fudan in my year from Fujian Province, and 3 of them majored in mathematics. Many people believe “If you want to walk far, walk together”. This is true for our class. Everybody studied extremely hard back then, because the opportunity was very precious to come by. The lights of the dorm were shutdown at 9:30pm every day. We would then went out on the streets and continued our reading under street lights. This certainly lay down a good knowledge foundation. Most people studied this hard throughout the four years. For me, I didn’t study as much after the first year. I lost my interest in pure math, had concentration problems, and got hungry easily (before meal time). Thus, I did not attend most of classes after the first year and usually spent only the last one or two weeks before the final exams to pick materials taught in a semester. Believe it or not, I usually did well on final exams. Fortunately, the midterms and homework assignments did not count towards overall grades. People definitely have positive influence on each other, I remain good friends to many of my classmates. We were also lucky, being one of the first groups of college students after the cultural revolution. There was a generation gap, which gave us more room to grow as well as more opportunities. So selection bias, joint efforts and good timing are important factors of the success of our class.

Interviewers: Why did you decide to switch to statistics? Who influenced your decision most?

Fan: I chose math (as opposed to physics or chemistry), partly because there was a math fever at that time due to the overwhelming publicity of Jingrun Chen and his work on Goldbach's conjecture. Mathematicians were celebrities of sciences, and I was asked by my uncle, the most knowledgeable person in my extended family, to study math in college. Later, however, I thought math was too abstract for my own interest. I like to use math to understand the phenomena of the universe and to summarize and predict human activities. Even though I was a pure math major in undergraduate, I studied a lot of applied math subjects, like linear programming, statistics, PDE, and control theory. I indulged myself in things that interest me so much that I did not have a plan for the next step in my career. After the Chinese's New Year in my senior year, I met my friend on the train back to Shanghai. Somehow he convinced me to take the graduate school entrance exam which he has been preparing for a year, perhaps because I was too young to think about taking a job. Then I signed up for the exam, which was only two months away. Math exam includes not only various subjects in math but also politics, which requires a lot of efforts to prepare. For statistics, they were testing on mathematical analysis, linear algebra, probability and statistics, which demand more on common sense and mathematical maturity, rather than specialized knowledge. Time limit combined with my interest led to the choice of probability and statistics, so that I don’t have to prepare the more abstract subjects such as topology.

Interviewers: Were there someone you wanted to work with in the Chinese Academy of Science?

Fan: When I filed my application for graduate school, not really. The information was very limited, and we didn’t have the internet, for example. Now you can easily do a research on the people from different research institutes. Back then, we can only rely on the reputation of an institution. Since I was not particularly interested in pure math, I chose naturally statistics in the Institute of Applied Mathematics of the Chinese Academy of Science, without the knowledge of who would be my advisor.

Interviewers: Was your first teaching experience during your master education? How was it like?

Fan: Yes, that was great experience. I loved it. Actually, many of my students in that course are now leaders in the Chinese Census of Bureau. The course I taught was “Sample Survey”, which was about the basic skills required to collect and analyze data. It was not a course that a typical university would teach; even nowadays, many universities don’t offer it. They asked me to teach it since nobody wanted to. I was told to use the book “Sampling Techniques” written by Prof. Cochran. I taught mainly on Saturdays and I had a very good time. Many students were of my age (22 years old), for example, Gang Li (currently at UCLA) and Jianxin Pan (currently at University of Manchester). I was very nervous, so I asked my teacher Yimin Pan to sit with me during the first lecture. He sat there to make sure I was respected by the students. After a while, I became friends with a number of students in this class. What I did not tell them was the fact that I learned Sample Survey for the first time while teaching them. After this course, I taught in a summer school organized by Prof. Kaitai Fang on the topic “Directional Data”. Again, it was an area which I didn’t know anything before. Prof. Fang gave me a book based on which I was supposed...
Conversations

Ph.D. and Early Career

Interviewers: You chose Berkeley to pursue your Ph.D. Was there anything that attracted you?
Fan: Again, you have to keep in mind there was no internet and we had very limited information. The only thing we had was Library of Beijing. I looked up the ranking of universities in the US. Berkeley ranked uniformly among the top in math, physics, chemistry for graduate school. I applied for Berkeley, Stanford, Wisconsin and a few others. At the time, other than they ranked on top, I didn’t really know much. At Stanford, I knew a few people like T.W. Anderson and Ingram Olkin. It was a tough choice. Anyway, it was the decision I made and I would never regret. I think Berkeley treated me extremely well. I received fellowship each year, which was very difficult for continuing students. In addition to the summer support, I even got winter support because quite a few professors would like to support me financially.

Interviewers: That was certainly a memorable time. But what made you stand out among so many excellent graduate students?
Fan: When I went to Berkeley, I was better prepared than most of the cohort, because I took a three-year master program. I skipped the first course of theoretical statistics and instead took Le Cam’s asymptotic statistics in the first semester. In addition, I took probability from Jim Pitman. At the end of the course, he gave us a take-home exam for a week, which contains very hard problems. I think I did very well. Since then, I was always asked to TA for probability theory and I did it for more than one semester.

Interviewers: Did you consider switching to probability?
Fan: Not really. I like it very much, but my interest in the more applied area never changed. By then, it became clear to me that statistics has more direct applications.

Interviewers: How did you choose the first few research topics at Berkeley?
Fan: In the first year, I understood most classes well. But I lost my interest in the topic of multivariate analysis which I worked on during my master education and could not find a new area to work with. It was very difficult to switch to a new area without advisor’s guidance. So I didn’t do any research and only took courses in my first year. I admired those students who had problems to work on in the first year. My first two research topics emerged after David Donoho and Peter Bickel became my advisors. In the third semester, I was Donoho’s TA for time series. He was extremely busy, just like he is today, probably busier because he had a young son. I felt very lucky David agreed to work with me at the beginning of the fourth semester. There was some nice results on estimating linear functionals, then David asked me to see whether I can do something about nonlinear functionals such as quadratic functionals. It took me several months to completely solve the optimal rate of convergence. Much efforts were spent on matching the upper bound with the lower bound. At approximately the same time, Peter Bickel asked me to read a paper by Raymond Carroll and Peter Hall on deconvolution. I forgot what he told me exactly, but I did get some new results which were published in the Annals of Statistics. Both papers turned out to be frequently cited, and Carroll and Hall became my friends. Through these two papers, I picked up a few techniques and established my taste of good problems.

Interviewers: After you completed these projects, were you ready to graduate?
Fan: I had my first daughter in the fourth semester at Berkeley. At her one-month party, someone told me there was an opening at Stanford and encouraged me to apply. That initialized the idea of applying for an academic job even though my research just started a few months ago. So I graduated in three years. In retrospect, I should have stayed for one more year. I do believe one year makes a lot of difference.

Interviewers: Did you ever consider about industry jobs? Why UNC?
Fan: Actually, in the summer after my second year at Berkeley, IBM offered me a summer internship in San Jose. Berkeley also provided summer support for me. I thought there was not huge financial incentive to work in an unknown territory. In retrospect, I should have taken the internship. Working in an unfamiliar zone often yields unanticipated surprises. Honestly, I did not know how to find an industry job, but academic jobs were advertised on the IMS bulletin and Amstat News as they are today. Therefore, I took an easy route and applied for several universities that were ranked high in statistics. I was the first candidate interviewed at UNC, and it gave me an offer before Thanksgiving right after my interview.

Interviewers: Did you have any struggles as an assis-
tant professor?

Fan: That's universal, right? My first two grant applications were rejected and so were my early versions of the papers. Certainly, it was not very encouraging. In addition, I also struggled to find problems interesting enough to convince myself to work on. Luckily after a while, I became interested in nonparametric regression, which was the sources of my works in local polynomial regression.

Mid-career to Now

Interviewers: Can you share a bit on your experience at the Chinese University of Hong Kong?

Fan: I went to the Chinese University of Hong Kong for two reasons. One is that Wing Wong just went back to Hong Kong and tried to build a strong statistics hub in Hong Kong, which had a lot of resources including research grants back then. I was first invited there as a visitor for a semester to see whether I like there, and then for another year right afterwards. I like Hong Kong because people with my culture can easily adapt, and Hong Kong is beautiful. The dean of the faculty of science knew me very well after the two visits. The Asian financial crisis in 1997-98 made the dean there think that the faculty should launch a risk management science program and I got involved with the design. That was also the beginning of my research in finance. So when the (Statistics) department launched a new risk management program in 2000 and needed to a person to spearhead the efforts, I was appointed as the chair of the department.

Interviewers: When you decided to branch out to new areas, what kind of criterion did you use to select problems?

Fan: You two are doing well yourselves on this. For me I think in general, I easily get bored myself with a single topic. I want to branch out to learn how statistics can be used in other fields and then confront new problems that lead to the revision of the techniques I am familiar with. I was constantly searching for new topics to find problems with great social importance. As long as the problem is sufficiently important and complex, there are always rooms for innovation. There is of course a learning curve for each new area, but rewards outweigh risks. In general, as long as the problems are important and complex enough, chartering into new territories always leads to exciting discoveries.

Interviewers: You are recognized as perhaps the most versatile statistician. What’s your comment on this?

Fan: I am flattered. But I just wanted to see what new fundamental insights that I can provide and what new techniques that I can invent. I do not wish to put myself in a box.

Interviewers: Looking back, among all your papers, is there a personal favorite?

Fan: That’s difficult since we tend to get amnesia on the historical significance of the papers. In addition, there are so many different areas and different directions. Citation counts give you some ideas, but I don’t completely believe in citations or ignore them. I could easily pick 20 papers that I am happy with, but that can be simply due to the enthusiasm of an author.

Interviewers: In your career up to now, was there any part you would do differently?

Fan: I think yes. First, for whatever reasons, I have
been always over occupied by professional obligations and students. I could have written a few papers more clearly. Taking my 2001 paper on high-dimensional statistics as an example. I should have spent more time to explain things more clearly in the paper and to pick up a number of low-hanging fruits; I could have coined a better name like folded-concave penalty that I like to call it now, instead of "non-concave penalty". Also, I should have made better connections with LASSO via local linear approximations.

Interviewers: Do you have any advice to the new generation of statisticians?

Fan: The common difficulty is to find interesting and important research problems. A good opportunity for today's new researchers is to look out for application driven problems. You often find that the off-the-shelf tools are incapable of solving problems at hand. In most cases, existing statistical methodology needs to be adjusted or completely revised to suit a specific application and new theory should be developed. A great ability would be that after reading three to five papers, one is able to come up with a sensible problem to work on. I believe if you keep reading other people's works and talk with scientists in other fields, you will have many interesting problems to work with.

Interviewers: How do you balance advising, chairing, editorial, and other obligations?

Fan: Over the years, I always think of myself as the captain of a leaking boat in the ocean. The only way to keep it afloat is to get water out fast when it comes in. Plus, this boat should sail for a good destiny. It is very difficult, and I end up taxing on my sleep time and hobby. But, I like to work with students, participate in academic meetings, and do professional services. These give my life a purpose --- there is no time to be down. Raising students is probably the most challenging and time-consuming part. Everyone is different, and I tried my best to unleash everyone's potential. Plus, people are writing more papers nowadays than the time I graduated. I would not be able to find any job myself using today's standard, because my first paper was published two years after I received my Ph.D.

Interviewers: How do you choose students?

Fan: All professors want to work with motivated and strong students. I look for most promising students, but I also admit students who need my help. Moreover, I try to diversify the student body as much as I can.

Interviewers: What is your group size now?

Fan: I now have 12 Ph.D. students plus 4 postdocs, and it keeps growing over the last several years. Re-member if you take 4 students in a year, they will remain in your book for 3 to 4 years.

Organizational

Interviewers: You were hired by Princeton as a statistician. After you chaired the committee of statistical studies at Princeton, did you feel much obligation to bring statistics back to prime at Princeton, like the old days?

Fan: For this, maybe we need to tell a little bit of history of statistics at Princeton. The statistics department at Princeton had a glorious past, but it was closed in 1985 unfortunately, after disagreement within the department and the retirement of John Tukey. After that, there was an interdepartmental committee of statistical studies, which was formed to continue statistical education. In the next two decades, since there is no statistics department, many departments (at Princeton) developed their own statistical courses. The committee didn't function very much before I joined Princeton. I was actually not hired to revive Statistics; rather, I was hired as a statistician who knows some finance. The department of Operations Research & Financial Engineering (ORFE) thought it needed some statistical component. I believe that the department could grow better when more investments are put in statistics and data science. We have now recruited four people in ORFE already after my arrival. Moreover, Computer Science department and Institute for Integrative Genomics also hired new statisticians.

Interviewers: Have you been taking an active role in integrating the statistical components across campus?

Fan: Yes, and I hope I will be able to play a more active role down the road. Over the years, I am thinking of a statistical center on campus to put ourselves organized and more visible. With the help of my graduate students, I put together the course listing related to statistics on the web of committee of statistical studies. As of statistics research, we are currently reemerging in a new form, meaning that each of us has an area of interest, like machine learning, finance, big data, genomics, and social sciences. Taking ORFE for example, we always hear talks in completely different areas with diverse applications. In the future, the statistics and machine learning center can host all related faculty.

Interviewers: Princeton has been a role model for other institutions. As a statistician, do you feel there is any downside for not having a statistics department?
**Fan:** Certainly it has some negative impact. When there is no statistics department, it is hard to find the statistical components within the university for people from outside. The current state of not having a statistical department is unfortunate and should not be an example for other universities to follow. However, the on-going efforts on statistics and machine learning can set a role model for the future of statistics and data science.

**Interviewers:** Nowadays, there are more and more Chinese statisticians making great academic achievements. Can you comment on this phenomenon? How do you see their future contribution in modernizing China?

**Fan:** Statisticians of Chinese origin have made great contributions to Statistics. Otherwise, American universities would not have an edge in statistics over other parts of the world. Suppose, for example, we take all the Chinese statisticians away, statistics at US will not have much advantage over UK. In addition, many Chinese statisticians are young, and their contributions are still yet to come. I guess the peak of the population of Chinese statisticians will be probably be 20 years later. On the other hand, statistics departments should make more efforts in diversifying the graduate student body. It will be helpful for the statistics profession in the long run. Each year, a lot of statisticians visit China, meeting with the colleagues in China, attending the international conferences organized in China. This greatly shortens the time for statisticians in China to catch up with the current research frontiers. In addition, a lot of them teach summer courses in China, which is very beneficial for students and young researchers. To make greater impacts on society, statisticians in general should talk more to other disciplines, including industry, and make efforts to solve problems of high social impacts.

**Future Plans**

**Interviewers:** Is there a blueprint for the next 10, 20 or 30 years?

**Fan:** Wow, let me think. 20 years is hardest for me to predict. After 30 years, I hope I can retire (Laugh). In the next 10 years, I think I will continue my research agenda, especially on the big data paradigm. The data science plays a more prominent role in this century and it stimulates a lot of research on new statistical tools. I hope that in the next 10 years, there will be a good statistics/machine learning/data science center at Princeton University. But this requires a lot of efforts from many people, besides tremendous support from the university. I believe as technology evolves, statistics will play a more and more important role. It will be very important for us to learn the ability of handle big data. I hope after 10 years when you visit Princeton, there will be a very visible statistical identity. In addition, since I am currently the chairman of ORFE depart-
ment, I should say a few words about the department. ORFE is a very interesting analytic centered department. It focuses on quantitative tools to manage physical and financial resources. In review of the big data movement, I am hoping that the department will be bigger and more people in statistics, probability and optimization will be hired. The department is geared towards a good direction now. In 10 years, many junior people we hire today will become major players in the profession.

Interviewers: Is there any other department from other universities you would like ORFE to become? Fan: Academic excellence is our ultimate goal and the label is not important. I think it will be great if there is a big umbrella that covers all quantitative science, from statistics, applied mathematics, and operations research to optimization, stochastic modeling, and data science. This will allow us cross-fertilize these quantitative sciences and confront better the qualitative challenges from science and humanities.

Trivia

1. Jianqing invites all his students and postdocs to his home from time to time.
2. Jianqing travels over 100K miles every year to attend conferences and give seminar talks.

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Rain… How dramatic. I was on my way to take an early train from Washington DC to New York to present an independent analysis of a very visible and hugely controversial HIV vaccine clinical trial. And now Hurricane Isabel was bearing down on the Eastern Seaboard. Oh well, I thought, this will just add to the excitement.

I had been in my new job as head of the Biostatistics Research Branch at the National Institute of Allergy and Infectious Diseases for less than a year. Explaining the results of the VaxGen trial was my first big challenge, and I was determined to not screw it up. The trial results had been announced in February to great fanfare and criticism. Overall, the vaccine had no effect. But within certain subgroups --- blacks, Asians, nonwhites --- there was about a 50% reduction in the infection rate. It was uncertain as to whether this was a potential signal or a statistical aberration from looking at many subgroups. NIAID leadership thought this would be a reasonable thing for the new branch chief to work on. That was me.

Luckily I was able to work with a stellar group of statisticians at the University of Washington who I cannot praise enough. Over several months we discussed and refined the analyses. They worked incredible hours and produced an excellent report. I had cut short my summer vacation, leaving my family in Wisconsin, so I could make sure I was prepared. Now I was to present the results. I felt the numerical benefit in nonwhites was likely to be a statistical fluke.

My cab dropped me off at the hotel where the AIDS Vaccine Research Subcommittee was meeting. I remember thinking about the movie Hoosiers, where the basketball team from a very small school in Indiana makes it to the state finals. High school basketball is huge in Indiana. The eight kids are nervous as they walk into the empty, cavernous hall where they will later play the championship game. To reassure his team, the coach has two team members raise a tape measure to the hoop and determines the distance from the basket rim to the floor. Ten feet, just like at the court at Hickory High School. The setting may be sickeningly dramatic, but what you need to do is familiar. And if you’ve prepared, you should be okay.

I felt comfortable giving the talk, which was well received. During my train ride home in the sheeting rain I felt an enormous sense of relief. I hadn’t screwed up and I felt satisfied with myself. I smiled as I thought of the turmoil of the extensive preparations. Well that part’s finally over I thought.

Most of the work that we do in the Biostatistics Research Branch at NIAID is not quite so dramatic. Occasionally a visible and important issue arises, but the day-to-day work is also very satisfying. I think of the work as a blend of large and small science. Large science involves a network of investigators who are assembled to address a specific theme, such as the development of an HIV vaccine, or studying how disease in asthmatics waxes and wanes with time. Small science involves a single investigator or small team who might conduct a study of a new medicine in patients with a rare disorder, or try to characterize how well a vaccine for malaria might work by seeing how many parasites are born in the gut of a mosquito. Both large science and small science have their role. And being a statistician with opportunities to collaborate in each realm is very appealing.

I find infectious diseases fascinating. I liken it to an exquisitely complicated dance between the pathogen that infects us and our immune response, augmented by drugs and vaccines, which tries to destroy or contain the pathogen. Attacks are met with counterattacks and so on in an endlessly repeating conflict developed and refined by evolution over thousands of years. It is a grand story writ microscopically small. And understanding is required for us to do our job well.

I think of NIAID as an ideal place for a statistician who wants to understand the science of a disease and use this knowledge to temper the best way to statistically approach a problem. The problems are quite varied and can involve the analysis of high dimensional data, analyzing transplantation, assembling evidence to see how vaccine protection of an animal can infer protection in humans, address-
Statistics at Work

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When antiretroviral drugs should be started in HIV infected individuals, or how to best develop drugs for tuberculosis. New statistical methods are frequently required to optimally attack such problems. I like doing methods research inspired by applied problems and my modus operandi at NIH is to always be thinking of how a given problem might be better attacked by new statistical methods that we can develop. We accumulate different research problems and attack the ones that seem the most promising. I’m proud to work at NIAID and feel grateful for the projects our group works on and the support we receive. It’s a great environment if you like to develop methods inspired by collaborative work, and also value the occasional train ride in the rain.

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Statistical Contributions to the Regulatory Science of CDER of US FDA

H.M. James Hung, Sue-Jane Wang, Yi Tsong

U.S. Food and Drug Administration has seven centers, one of which is Center for Drug Evaluation and Research that has the largest statistics group – Office of Biostatistics (OB). There are seven biometrics divisions (named DBI - DBVII) under the OB. DBI - DBV are aligned with the medical offices, ODEI – ODEV (ODE: Office of Drug Evaluation). Each ODE office has three or four medical divisions and thus each biometric division has three or four statistics teams providing statistical services for the aligned medical divisions; for instance, the cardio-renal statistics team provides statistical services for the Division of Cardio-Renal Products. DBVII provides services mainly for Office of Suveillance and Epidemiology. DBVI provides consultation on the statistical issues related to generic drugs, animal carcinogenicity studies, product process and manufacturing standards, early phase clinical safety studies including drug abuse potential and QTc prolongation.

The primary responsibility of statisticians in each biometrics division by and large is to perform independent statistical reviews for the regulatory applications submitted by the pharmaceutical and biopharmaceutical industry. The regulatory applications involve animal carcinogenicity studies, product quality assessment, early phase clinical trials, confirmatory or pivotal clinical trials, post-marketing studies, etc. The statistical issues involved in the design and analysis dimensions of these studies can be in a great variety, depending on disease type and states, mechanisms of action and properties of the test products under study.

For Investigational New Drug (IND) applications, statisticians are charged to assess the validity of the proposed trial design in terms of type I error and type II error issues, bias in estimation, trial conduct, operational bias, randomization, blinding, whether the clinical program is able to provide sufficient evidence for the clinical benefits or possibly harms at issue, etc. Nowadays, the designs of “pivotal” clinical trials (i.e., the trials expected to provide support for the drug to be approved) rely on how much valuable information is available from the preceding learning trials. Statisticians increasingly engage in providing regulatory and scientific comments on the early-phase learning trials. The same principles are pertinent to non-clinical issues, except that much limited sample size and issues with unspecified multiple comparisons often arise and are very difficult to handle.

For new drug applications (NDA) submitted by the regulated pharmaceutical and biopharmaceutical companies, statistical reviewers will begin with confirming the main efficacy/harm findings based on the data submitted by the companies. Many additional statistical analyses are then performed to scrutinize the quality of the trials and the data, assess robustness of the findings, address the questions raised by medical reviewers, assess the strength of evidence, write a statistical review report, etc. The similar process is applied to review of animal carcinogenicity studies, QTc trials, drug abuse potential trials and product process and qual-
ity assessments. Statistical reviewers also perform statistical analyses to validate the sponsor’s labeling claims. In addition to medical reviewers, statistical reviewers in Division VI and VII work closely with chemists, biologists, clinical pharmacologists and epidemiologists.

The review tasks are mostly quite extensive, involving many internal meetings with the medical or other relevant divisions and the reviewers of relevant disciplines, the review teams, consultation with the team leaders and division directors, etc. Close collaboration between statistical review team and medical or other relevant review team is required and often seamless. Often, the expertise of the statistical review team is much relied upon by the medical and other relevant review team and in regulatory decision making.

As the biotechnology for medical research has recently advanced a great deal, e.g., development of many potentially useful biomarkers, pharmacogenomics, statisticians are increasingly faced with submissions for biomarker qualification (for classifying patients into risk categories or predicting drug effects on clinical endpoints that are hard to capture in a reasonable time frame of a clinical trial), pharmacogenomics and their substudies (e.g., for better identifying treatment responders) embedded in the evidence-setting clinical trials. The statistical paradigms involved in studying these topics generally differ from those for the evidence-setting clinical trials. During the development stage, the main goal is to facilitate an optimal way or an efficient way for learning, which often utilizes extensive statistical modeling, model diagnostics and validation, statistical simulation, etc.

Many statisticians under OB actively engage in development of regulatory guidance documents, white papers or points to consider papers for the pharmaceutical and biopharmaceutical industry and the regulatory reviewers. A few examples are the guidance documents being developed for non-inferiority, adaptive design, multiple endpoints, enrichment, drug abuse potential, drug abuse deterrent, QTc, animal carcinogenicity, etc. In addition, some statisticians participate in development of disease-specific guidance documents for medical divisions.

More recently, newer or novel study designs, such as adaptive designs or flexible designs, designs and analyses for rare diseases, are gaining broader attention in hope of, e.g., shortening trial duration or reducing the number of patients needed to study as compared to traditional study designs. On another front, biosimilarity is an emerging area. It is anticipated that in the near future many biologic company will be and in fact are pursuing biosimilars, which are the generics of biological drugs. Because biological drug has its large molecular and complex structure of active attributes, its generic version is known to be difficult to manufacture in order to have the same effect. The biosimilarity assessment requires approval to depend on both clinical similarity for the major indication and process similarity for its fingerprinting of attributes and for each major attribute. Involvement of statisticians is definitely needed in design and methodological developments.

Regulatory research has flourished in the past ten years in FDA. Many statisticians under OB have been actively conducting statistical research and in fact are forefronts to improve the regulatory science of FDA. The topics covered are wide: non-inferiority, adaptive design, pharmacogenomics, biomarkers, multi-regional clinical trials, handling of missing data, methods for multiplicity adjustments, enhancement of clinical trial designs, product quality assessment, QTc design and analysis, drug abuse potential assessment, bioequivalence of non-systemic generic drugs, product quality by design, Bayesian approaches for safety assessment, data mining, etc. A number of medical divisions have launched initiatives to improve clinical trial designs, select more sensitive clinical endpoints, learn placebo response and disease, etc. Many statistical teams are also actively participating in such medical research, which helps advance the FDA regulatory science a great deal. A few notable cases are the projects of ambulatory blood pressure monitoring, placebo in hypertension adverse reaction meta-analysis, multi-regional clinical studies, etc.

In brief, statisticians in CDER of FDA play essential roles in promoting and advancing regulatory sciences through assessment of efficacy and safety of drug and biologic products, quality in processing and manufacturing of the approved products, drug safety long after it is approved and when prescribed to patients beyond the scope studied in clinical trials, and the equivalence between a generic and innovative version of drug and biological products. All these highly significant tasks are done through a great deal of dedication and tremendous efforts in review of regulatory applications and regulatory research.

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Statisticians at Work at the FDA's Center for Biologics Evaluation and Research

John Scott and Lihan Yan

The United States Food and Drug Administration (FDA) has regulatory oversight over approximately 25% of U.S. consumer spending (around $1 trillion annually), and is responsible for protecting public health by ensuring access to safe, wholesome, and properly labeled foods and to safe and effective medical products, by regulating tobacco products, and by assuring cosmetics and dietary supplements are safe and accurately labeled. The FDA employs roughly 300 statisticians and biostatisticians who serve critical roles in all facets of its public health mission, including regulation of drugs, medical devices, veterinary medicine, tobacco products, food, cosmetics, and dietary supplements.

We work at the FDA’s Center for Biologics Evaluation and Research (CBER), which regulates biological products for human use including, among other products, preventive vaccines, blood products and related devices, and cellular, tissue, and gene therapies. There are 37 statisticians in CBER’s Office of Biostatistics and Epidemiology, most of whom work in the Division of Biostatistics (DB). The primary task of DB statisticians is to review investigational and marketing applications submitted to CBER by industry and academic researchers. In these reviews, statisticians work as part of interdisciplinary teams including physicians, pharmacologists, basic scientists, regulatory experts, and others as needed.

Investigational applications are proposals for clinical trials with investigational (e.g., unapproved) agents, including proposals for Phase I, II, III, and sometimes IV trials. DB statisticians review study protocols and associated documents to ensure that these proposals are scientifically sound, are adequate in design to meet their stated objectives, and don’t put study subjects at unnecessary risk. Generally, Phase III trials intended to support product licensure (“pivotal trials”) receive the highest level of statistical scrutiny, while Phase I and II trials may need more or less statistical attention depending on the nature of the investigation. For example, an innovative dose escalation proposal in Phase I or a complicated adaptive selection design in Phase II may require significant statistical review. At all stages of product development, CBER statisticians provide critical feedback to researchers to help ensure the scientific integrity of the clinical trials and to maximize the chances of demonstrating that a good product is safe and effective.

Marketing applications are the culmination of a product development program, and are submitted following the successful completion of clinical trials. Statistical reviewers ensure that study protocols were scientifically sound, that studies were executed with scientific integrity, and that the collected data support the conclusions claimed by the applicant. This generally includes study-by-study review as well as overall integrated assessments of safety and efficacy. Statisticians review data analysis results presented by applicants and also perform their own supplemental analyses, often in close collaboration with medical colleagues or other FDA scientists. Some marketing applications, particularly for biological assays, in vitro diagnostics (IVDs), and other medical devices, rely heavily on non-clinical data, and the DB statisticians who review these applications need to be conversant with the experimental designs used in laboratory settings as well as with clinical trials. In some cases, especially for novel products or controversial decisions, the FDA will seek advice in a public forum from an external Advisory Committee prior to making a decision on a marketing application. When this happens, statisticians are generally heavily involved in preparing briefing documents for the Advisory Committees and sometimes will present their statistical evaluations to the committee.

Additional statistical review is sometimes called...
Statisticians at Work

for after a product is licensed. DB statisticians work with colleagues in the Division of Epidemiology and elsewhere in CBER to review proposals for and results from Phase IV post-marketing studies. These studies are used to further evaluate the safety and, sometimes, effectiveness of products once they are on the market. Statisticians also collaborate on associated research in pharmacovigilance methodology, data mining, and public health surveillance.

The nature of the statistical problems faced by DB reviewers varies according to the product being reviewed. DB is divided into two branches, a Vaccines Evaluation Branch (VEB) and a Therapeutics Evaluation Branch (TEB). Statisticians in VEB review vaccine and related bioassay submissions, as well as allergenic product submissions. Many vaccine studies involve non-inferiority objectives and multiple co-primary endpoints, and statisticians are heavily involved in the determination of the criteria for non-inferiority margins and study success. Other challenges in the statistical evaluation of vaccines include assessments of correlates of protection, vaccine safety, and statistical design and methods used in bioassay development. Evaluating vaccine efficacy, especially for HIV, TB, malaria, pandemic influenza, and diseases of potential bioterrorism, can also present special challenges involving the statisticians in VEB.

Statisticians in TEB work in one of three teams: one team reviews cellular, tissue, and gene therapy submissions, another team reviews therapeutic blood products, and a third team reviews IVDs for screening blood donors for infectious diseases as well as various other medical devices and other products related to maintaining a safe blood supply. Each team faces unique challenges in their statistical work. Cancer vaccines, which attempt to harness an individual’s immune system to help fight cancer, comprise one important class of cellular and gene therapies. One challenge in this area is that cancer vaccines often have a delayed effect, which can complicate sample size calculations and survival analyses. Another issue faced by the cellular, tissue, and gene therapy team and shared by the therapeutic blood products team is that many products in these areas are indicated for very rare diseases. Such rare disease indications require small clinical trials, where maximizing trial efficiency is critical and asymptotic statistical methods may not be appropriate. Another interesting challenge in blood therapeutics is the evaluation of medical countermeasure products, including products intended for use in the event of bioterrorism events. Human trials are often infeasible for such products, and their evaluation depends heavily on animal studies. The blood devices team works on a wide range of difficult issues, including product development for HLA-based assays intended to be companion diagnostics for drugs and biologics in development (e.g., by identifying patients who may benefit the most from a drug, or subjects who might have the largest chance of a dangerous side effect).

In addition to statistical review, DB statisticians work on statistical methodology research, collaborative research with colleagues inside and outside of FDA, regulatory policy issues, outreach to industry and to the public, and many other tasks. One of the unique challenges at CBER is that, unlike many statisticians from industry and academia who are involved for a long time on a relatively small number of projects through their life-cycles, we often need to learn about entirely new subject matter in a matter of days, weeks, or at most several months. Our review work requires us to quickly understand an application and make technical judgments on the soundness of the study design, the accuracy and applicability of the results, and appropriateness from a regulatory perspective. We often see new problems and new challenges through our reviews, and try to squeeze any little extra work time, and a good amount of our own personal time, for further exploration and for research. Our research questions tend to be application-focused and based on issues that have arisen in reviews.

One of the greatest pleasures of working as a statistician at CBER is the knowledge that our principal goal at all times is to protect public health, and that our work can have a profound and meaningful impact on people’s lives. Indeed, in a recent internal survey, the vast majority of DB reviewers cited these factors as their major sources of job satisfaction. We also have a never-ending source of new and interesting problems to consider, which is both challenging and exciting. CBER is a wonderful place to work as a statistician, and we are always learning while we do our jobs.

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统计之都简介
邱怡轩 谢益辉


伴随着统计学理论和应用的迅速发展，以及当前数据科学的持续升温，人们越来越意识到统计学及其相关技术在应用领域的巨大潜力。统计之都借着这股东风，希望搭建一个开放的平台，使得科研人员、数据分析人员和统计学爱好者能互相交流和合作，促进彼此知识和技能的增长。

统计之都网站主要由主站和论坛两部分构成。主站是由众多撰稿者定期更新的统计学博客，内容涵盖统计学理论、数据分析技巧、统计模型、统计计算和软件应用等广泛的内容，同时会有相关会议及沙龙的新闻通知。论坛则是用户进行各类统计学问题讨论的互动平台，由数理统计、应用统计、软件应用等板块构成，其中的R语言板块是国内最活跃的R语言社区。统计之都的网站遵循开源的精神，其维护和管理均由志愿者完成，任何人都可以通过向管理员申请的方式成为主站作者或网站的维护者。

除了线上的交流之外，统计之都社区还定期开展一系列的线下活动，其中最重要的是自2008年以来一直延续至今的中国R语言会议，每年分别于5月和11月在北京和上海召开。R语言会议的举办对国内R语言和数据分析的普及起了极大的推动作用。

作为对R语言会议的补充，2012年以来统计之都还开展了一系列的沙龙活动，同时其主题也扩展到网络数据分析、可视化、海量数据处理等前沿的统计学问题。

统计之都以专业、人本和正直作为社区的格言，力图通过专业的知识和团队，人本的交流与传播，正直的态度和审视，来更好地推动统计学在中国的发展与传播。

承蒙阎军老师厚爱，本期ICSA Bulletin中我们有机会挑选一批有代表性的文章在此简要介绍一下：

- 杨灿：《那些年，我们一起追的EB》（http://cos.name/2012/05/chase-after-eb/）年轻朋友们可能都知道这个标题来自于《那些年，我们一起追的女孩》。这篇文章写得颇有金庸武侠风，描绘了作者心目中的英雄：Efron, Bradley（你也可以把EB理解为Empirical Bayes）。文章介绍了Efron过去的逸事，James-Stein估计量和收缩估计（Shrinkage），虚假发现率（FDR）等等，作者的热情令人读来非常感动和敬佩。
- 谢益辉：《真理在缩水，还是上帝在掷骰子》（http://cos.name/2011/07/we-never-know-randomness/）主要阐述了对“随机”的理解，尤其是我们在认知上的潜在偏误，例如我们对离群点的认识和对QQ图（Quantile-Quantile）以及正态分布之间的联系的认识可能都没有想像中客观。作者考虑一下源头上的统计推断问题，例如“为什么对连续变量来说，似然函数是密度函数的乘积？”（注意密度本身并不是概率），“为什么正态分布和χ2分布在渐近统计中有核心地位”，“怎么看待贝叶斯统计”等等。作者也介绍了P值的误区以及虚假发现率，文章最后以可重复性的统计研究结束。
- 陈逸波：《社会网络分析：探索人人网好友推荐系统》（http://cos.name/2011/04/exploring-renren-social-network/）人人网是国内类似于Facebook的社交网站，本文主要利用Rcurl包动态抓取好友数据，
并用 igraph 包绘图，我们可以清楚地看到好友的聚类特征（如大学同学、高中同学、统计之都的会员等），作者的探索结果和人人网自身的推荐模型高度吻合，说明数据分析非常有效。

丁鹏：《因果推断简介之五：因果图（Causal Diagram）》(http://cos.name/2012/10/causality5-causal-diagram/) 作者在统计之都发表了一系列关于因果推断的文章，介绍了因果推断中的很多重要概念，并给出了详细的数学公式说明及证明，而且每篇文章后面都有思考题，对这个领域感兴趣的读者不妨一读。

统计之都网站中还有很多其他有意思的文章，话题非常广泛，例如“需要相亲几次才能找到靠谱的对象?”、“议员是如何投票的?”、“25 年后的统计系会是什么样?”、“用 R 来给微博添把火”、“有边界区间上的核密度估计”等等。这些作品有的来源于学生课堂作业，有的来自个人博客，有的是工作之余的个人爱好。

限于版面，最终我们只发出其中的四篇文章（邱怡轩的《统计词话》, 杨灿的《那些年，我们一起追 EB》，林宇的《用 R 绘制情人节的礼物》，及刘思喆的《爱情永远寂寞》）。发出的文章和网络原文略有不同。

我们非常欢迎在欧美以及全世界的华人同胞加入 COS 团队，共同探索有趣的统计话题并借此推广统计学。如果有兴趣，请 Email 联系我们：admin@cos.name，我们的新浪微博是 http://weibo.com/cosname。

统计词话 (二)

邱怡轩

抬头，他们看到了诗云。

诗云处于已消失的太阳系所在的位置，是一片直径为一百个天文单位的旋涡状星云，形状很像银河系。空心地球处于诗云边缘，与原始太阳在银河系中的位置也很相似，不同的是地球的轨道与诗云不在同一平面，这就使得从地球上可以看到诗云的一面，而不是像银河系那样只能看到截面。


既然数据库里面有词牌和作者的记录，那么一个很自然的疑问是，哪些词牌被使用的频率最高？又有哪些词人的词作最为丰盛？这两个问题并不困难，只需要对他们进行频率统计然后排序即可。以下是 R 语言的代码和结果（数据下载地址https://bitbucket.org/yixuan/cn/downloads/SongPoem.tar.gz）:

doc = read.csv("SongPoem.csv");
author = doc$Author;
cipai = doc$Title2;
tab = table(author, cipai);

r1 = sort(table(author), decreasing = TRUE)[1:20];
r1 = data.frame(Author = names(r1), Freq = r1);
rownames(r1) = 1:nrow(r1);
r1

r2 = sort(table(cipai), decreasing = TRUE)[1:20];
r2 = data.frame(Cipai = names(r2), Freq = r2);
rownames(r2) = 1:nrow(r2);
r2

统计之都

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按作者排序（无名氏指代所有不知道姓名的作者，非特指某一位）：

<table>
<thead>
<tr>
<th>作者</th>
<th>频数</th>
<th>作者</th>
<th>频数</th>
</tr>
</thead>
<tbody>
<tr>
<td>“无名氏”</td>
<td>1569</td>
<td>吴潜</td>
<td>258</td>
</tr>
<tr>
<td>辛弃疾</td>
<td>629</td>
<td>朱敦儒</td>
<td>246</td>
</tr>
<tr>
<td>苏轼</td>
<td>362</td>
<td>欧阳修</td>
<td>242</td>
</tr>
<tr>
<td>刘辰翁</td>
<td>356</td>
<td>张孝祥</td>
<td>224</td>
</tr>
<tr>
<td>吴文英</td>
<td>341</td>
<td>柳永</td>
<td>213</td>
</tr>
<tr>
<td>赵长卿</td>
<td>339</td>
<td>陈允平</td>
<td>209</td>
</tr>
<tr>
<td>张炎</td>
<td>302</td>
<td>毛滂</td>
<td>204</td>
</tr>
<tr>
<td>贺铸</td>
<td>283</td>
<td>李曾伯</td>
<td>202</td>
</tr>
<tr>
<td>刘克庄</td>
<td>269</td>
<td>韩淲</td>
<td>197</td>
</tr>
<tr>
<td>燕几道</td>
<td>260</td>
<td>黄庭坚</td>
<td>192</td>
</tr>
</tbody>
</table>

按词牌排序（“失调名”指词牌名已佚失，同样是一个集合）：

<table>
<thead>
<tr>
<th>词牌</th>
<th>频数</th>
<th>词牌</th>
<th>频数</th>
</tr>
</thead>
<tbody>
<tr>
<td>浣溪沙</td>
<td>814</td>
<td>贺新郎</td>
<td>438</td>
</tr>
<tr>
<td>水调歌头</td>
<td>711</td>
<td>沁园春</td>
<td>432</td>
</tr>
<tr>
<td>鹧鸪天</td>
<td>641</td>
<td>点绛唇</td>
<td>388</td>
</tr>
<tr>
<td>菩萨蛮</td>
<td>603</td>
<td>“失调名”</td>
<td>371</td>
</tr>
<tr>
<td>念奴娇</td>
<td>590</td>
<td>清平乐</td>
<td>346</td>
</tr>
<tr>
<td>满江红</td>
<td>529</td>
<td>满庭芳</td>
<td>325</td>
</tr>
<tr>
<td>西江月</td>
<td>492</td>
<td>玉楼春</td>
<td>308</td>
</tr>
<tr>
<td>临江仙</td>
<td>477</td>
<td>水龙吟</td>
<td>305</td>
</tr>
<tr>
<td>蝶恋花</td>
<td>476</td>
<td>鹊踏枝</td>
<td>298</td>
</tr>
<tr>
<td>减字木兰花</td>
<td>441</td>
<td>好事近</td>
<td>296</td>
</tr>
</tbody>
</table>

对于作者，里面有不少“熟人”，也有一些“陌生”，看来并不是越高的词人越能流芳后世。有时候你了解一个词人，或许只是他/她的一首词，甚至一句话所打动，而更多的人恐怕只能是在时间的沉淀中化作历史的尘埃。这当然是题外话了。
以上的结果十分明显，也不是本文的重点，所以就不再细说了。注意到这两个排序是将词牌和作者分开来看，那我们不禁要问，词牌和作者之间是否存在一些联动的关系？比如，我们想知道是否有那么一些人，他们都喜欢用同一词牌来作词；又或者，是否那些高产的词人经常用的也是那些高频的词牌呢？

对于这个疑问，一个很直接的想法是做出词人与词牌的对应关系。在《全宋词》的数据中，共有1377位词人和876个词牌，那么我们就可构造一个1377 x 876的0-1矩阵，取1的元素表示这一行所对应的词人使用了这一列对应的词牌。我们将这个矩阵变成一张图片，每一个像素点就是矩阵的一个元素，黑色的部分是0，白色的部分是1；如图[Left]。

从这张“夜空中的星星”我们可以发现，绝大部的点都被黑色所占据，这其实很容易理解：一个词人不可能写过所有的词牌，一个词牌也不可能人人都会去写。然而我们会注意到一个问题——“星星”隔得太远了。在黑色的背景中，这些“星星”零散地散布在夜空中的各个角落，而由于一种“星星相惜”的心情，我们似乎希望能把那些最亮的“星”聚在一起。

但这至少在技术上就遇到了一个问题：矩阵的每一行代表一位作者，每一列代表一个词牌，如果我们想要交换两位作者（或两个词牌）的位置，就会同时交换矩阵的某两行（或某两列），这样一来，当你拉近了某两颗“星”的距离，就可能同时延长了另外两颗“星”的距离。

幸运的是，在统计学中有一种算法可以解决这个矛盾，它被称为双向聚类（Co-clustering，Biclustering，或Two-mode clustering）。双向聚类是一种矩阵排序技术，简单地来说，它就是通过矩阵中行与行之间、列与列之间的交换，使得取值相近的元素尽可能靠在一起，达到聚类的效果。我们使用R中的seriation软件包来对之前的0-1矩阵进行聚类，最终可以得到如图[Right]。

很显然，这张图中“星星”变得更加集中，放眼望去，就好像是文字和名字交织成的两条银河。让我们把目光聚焦到“星星”最密集的地方，最后可以得到以下几个“星团”（只选取了若干最有代表性的）：

<table>
<thead>
<tr>
<th>西江月</th>
<th>鹧鸪天</th>
<th>临江仙</th>
</tr>
</thead>
<tbody>
<tr>
<td>刘辰翁</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>辛弃疾</td>
<td>17</td>
<td>63</td>
</tr>
<tr>
<td>无名氏</td>
<td>43</td>
<td>60</td>
</tr>
<tr>
<td>赵长卿</td>
<td>3</td>
<td>21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>满江红</th>
<th>念奴娇</th>
<th>蝶恋花</th>
</tr>
</thead>
<tbody>
<tr>
<td>张孝祥</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>孝友</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>朱敦儒</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>黄庭坚</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>苏轼</td>
<td>46</td>
<td>22</td>
</tr>
<tr>
<td>陈亮</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>赵鼎</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>韩流</td>
<td>36</td>
<td>16</td>
</tr>
</tbody>
</table>

矩阵中的元素表示这个词人写过多少篇对应词牌的词作。

矩阵排序在数据可视化方面还有很多有意思的运用，例如在相关矩阵可视化中，通过对相关系数矩阵进行排序，可以更清楚地看出变量之间的相关关系。以下图形来自于corrplot软件包corrMatOrder()函数的帮助文档：

```r
par(mfrow = c(1, 2));
M = cor(mtcars);
order.AOE = corrMatOrder(M, order = "AOE");
M.AOE = M[order.AOE, order.AOE];
corrplot(M);
corrplot(M.AOE);
corrRect(c(4, 2, 5));
```

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关于双向聚类只是在这里做一个简单的介绍，如果对此感兴趣，还可以继续搜索相关的文献，例如这篇综述文章：http://innar.com/Liiv_Seriation.pdf。

最后，你有没有觉得之前那张黑夜与星星的图不够炫？那是因为词人和词牌这两个维度是在相互垂直的坐标轴上，所以给人一种太规整的感觉。接下来我们摆弄一个小的技巧，就是把它们放到极坐标中，每一个词牌代表一个角度（方向），每一位词人则对应于一个距离，于是之前的那张图就转变成了下面的样子：

![极坐标图](image)

最后，我们再用核密度平滑来模拟星光的效果（使用smoothScatter()绘制平滑散点图），就成了最后这片璀璨的群星：

![平滑散点图](image)

在这一片星海中，每一个同心圆（椭圆）都代表了一位词人，而从中心向外的每一个方向就是一个词牌。这是人类的群星闪耀时，而幸运的是，这一片星空，是属于这个古老的国度的。

附：绘制图形的 R 语言代码

```r
visualizeMatrix = function(m) {
  m = m > 0;
  par(mar = c(0, 0, 0, 0));
  m = m[nrow(m):1, ];
  image(1:ncol(m),
        1:nrow(m),
        t(m),
        col = c("black", "white"),
        useRaster = TRUE);
}

# 矩阵0-1
visualizeMatrix(tab[, ]); 
# 矩阵排序
library(seriation);
set.seed(123);
ord = seriate(tab[, ] > 0);
m = permute(tab[, ], ord);
visualizeMatrix(m);

# 极坐标计算
coord = which(m > 0, arr.ind = TRUE);
theta = (coord[, 2] - 1) / 
        (max(coord[, 2 ]) - 1) * 360 / 180 * pi;
rho = coord[, 1] / max(coord[, 1]);
x = rho * cos(theta);
y = rho * sin(theta);

# 极坐标图
par(bg = "black", mar = c(0, 0, 0, 0));
plot(x, y, col = "white", pch = ".");

# 平滑散点图
par(bg = "black", mar = c(0, 0, 0, 0));
mypalette = colorRampPalette(c("#1F1C17",
                             "#637080",
                             "#CBC2B7",
                             "#D2D6D9"),
                             space = "Lab");
smoothScatter(x, y,
             colramp = mypalette, nbin = 600,
             bandwidth = 0.1,
             col = "white", nrpoints = Inf);`
身手，还不伤了三观，所以我暂时不会‘献血’。**比如他的《天下无贼》，我就特别喜欢**。然而，天下可以无贼，却不可以没有英雄（不是张导的那个《英雄》）。今天我要写的是统计学的英豪以及英雄的故事。英雄的名字叫 EB，英雄的故事也叫 EB。

### 谁是 EB？

故事的主人公自然就是 Efron, Bradley (EB)。2012年的5月24日，是他74岁生日——从他拿到PhD的那年算起，正好五十年。他对统计学的贡献是巨大的，必将永远载入人类史册。正如爱因斯坦所说：“方程对我而言更重要些，因为政治是为当前，而一个方程却是一种永恒的东西（Equations are more important to me, because politics is for the present, but an equation is something for eternity）。”人生天地之间，如白驹过隙，忽然而已。然而，经典就永世相传。若干年后，人们遥想天地之间，如黄河泛滥，一发不可收拾。

### James-Stein Estimator

先来一个简单不简单的例子。现已观察到N个$z_i$值，即$z_1, z_2, ..., z_N$，还知道$z_i$独立地来自$\mathcal{N}(\mu, 1)$正态分布，方差为1的正态分布，方差为1的正态分布，即$z_i|\mu_i \sim \mathcal{N}(\mu_i, 1), i = 1, 2, ..., N$。问题是：如何从观察到的$z = [z_1, z_2, ..., z_N]$估计$\mu = [\mu_1, \mu_2, ..., \mu_N]$？地球人都知道有一种方法去估计$\mu = [\mu_1, \mu_2, ..., \mu_N]$，那就是$\hat{\mu} = z$，即$\mu_i = z_i, i = 1, 2, ..., N$。其实，这就使最大似然估计，记为$\hat{\mu}_{ML}$。现在的问题是：有没有更好的办法呢？答案是肯定的！那就是传说中的James-Stein Estimator，

$$
\hat{\mu}_{JS} = (1 - \frac{N - 2}{||z||^2})z. \quad (1)
$$

只要$N \geq 3$，$\hat{\mu}_{JS}$的误差总是比$\hat{\mu}_{ML}$的误差小。从公式(1)看，$\hat{\mu}_{JS}$比$\hat{\mu}_{ML}$多了一个重要 shrinkage：

$$
1 - \frac{N - 2}{||z||^2}.
$$

最重要的也正是有趣的是知道这个 shrinkage 怎么来的。已知$z_i|\mu_i \sim \mathcal{N}(\mu_i, 1)$，即已知条件概率$f(z_i|\mu_i)$。现在假设$\mu_i \sim \mathcal{N}(0, \sigma^2), i = 1, 2, ..., N$，即假设先验概率$g(\mu_i)$，求出后验期望$E(\mu_i|z_i)$，并用它作$\hat{\mu}_i$的估计。于是可以根据贝叶斯公式计算

$$
g(\mu_i|z_i) = \frac{f(z_i|\mu_i)g(\mu_i)d\mu_i}{\int f(z_i|\mu_i)g(\mu_i)d\mu_i}. \quad (2)
$$
Cappital of Statistics

因为这里 $f(z|\mu_i)$ 和 $g(\mu)$ 都是高斯分布，我们可以解析地计算

- $z_i$ 的边际分布：
  $$z_i \sim \mathcal{N}(0, 1 + \sigma^2)$$

- $\mu_i$ 的后验分布：
  $$\mu_i|z_i \sim \mathcal{N}\left(1 - \frac{1}{1 + \sigma^2}z_i, \frac{\sigma^2}{1 + \sigma^2}\right).$$

于是可得

$$E(\mu_i|z_i) = 1 - \frac{1}{1 + \sigma^2}z_i.$$ (5)

注意，这里 $\sigma^2$ 是不知道的，需要估计 $\sigma^2$。经验贝叶斯在这里起作用了，即用观察到的数据去估计 $\sigma^2$。下面需要用到统计学里面的两个常识：第一，如果随机变量 $z_i, i = 1, 2, \ldots, N$ 都独立地来自标准正态分布，那么它们的平方和服从自由度为 $N$ 的 $\chi^2$ 分布，即 $Q = \sum_{i=1}^N z_i^2 \sim \chi^2_N$。第二，如果 $Q \sim \chi^2_N$，那么 $1/Q$ 服从自由度为 $N$ 的逆-$\chi^2$ 分布，$E(1/Q) = 1/\sqrt{N-2}$。现在来估计 $\sigma^2$。根据式 (3)，我们有

$$E(z_i^2) = \sigma^2 + 1.$$ (4)

从逆-$\chi^2$ 分布，且 $E\left[\frac{1}{\sum_{i=1}^N z_i^2 + 1}\right] = 1/\sqrt{N-2}$。因此我们可以用 $\frac{N-2}{N} E(z_i^2)$ 作为对 $1/\sum_{i=1}^N z_i^2 + 1$ 的估计。这样就得到了奇妙的 James-Stein Estimator $\hat{\mu}$。有一点是值得注意的，在估计 $\mu_i$ 的时候，James-Stein Estimator 实际上用到了所有的 $z_i$ 的信息，尽管每个 $z_i$ 都是独立的。Efron 教授把这个称为“Learning from experience of others”。

我们试着从其它角度来看这个问题。能否通过对下面这个问题的求解来估计 $\mu$ 呢？

$$\min_{\mu} \left\{||z - \mu||^2 + \lambda ||\mu||^2 \right\}$$ (6)

其中 $\lambda$ 是待确定的一个参数。容易看出 $\mu$ 有解析解：

$$\mu = \frac{1}{1 + \lambda} z.$$ (7)

式 (7) 是不是和式 (3) 惊人的相似？一个是 $\lambda$ 未知，一个是 $\sigma^2$ 未知。其实，式 (3) 就是频率派常用的 Ridge regression，$\lambda$ 常常通过交叉验证 (Cross-validation) 来确定。

还有一个没有其他角度呢？答案是肯定的。参见 Bishop 书 Pattern recognition and machine learning Section 3.5。我们做机器学习的，称这个方法为“Evidence approximation”或者“type 2 maximum likelihood”，实际上也就是经验贝叶斯。总结一下，啥叫 EB？就是像贝叶斯学派一样假设先验分布，并且利用经验数据来估计先验分布的方法，就是经验贝叶斯。贝叶斯的框架是比较容易掌握的，即假设先验分布，写出 likelihood，后验分布则正比于这两者的乘积，然后通常用 MCMC 来求解（当然，真正的贝叶斯高手会根据问题的特点来设计模型，加速求解）。一旦掌握这个框架，在这个框架下做事，则是不…
比较一下式 (12) 与式 (11)，就知道 $\eta = \mu, \psi(\eta) = \eta^2/2$。再比如泊松分布的概率密度函数，
$$h(x) = \frac{\exp(-\mu)x^x}{x!} = \exp(-\mu + \mu x) x!$$
（13）
于是可知 $\eta = \log \mu, \psi(\eta) = \exp(\eta) = \mu$。

浅草才能没马蹄

古诗云：乱花渐欲迷人眼，浅草才能没马蹄。花太多容易迷失方向，草太深则跑不了马。所以，一定要“浅”才行。

前面的数学推导，读起来肯定不流畅 (我也写得累啊) ，尤其是对这些东西不太熟悉的童鞋。好吧，现在简单地总结一下。前面的讨论都是基于图 1 所示的结构。图中的只在于对先验分布 $g(\cdot)$ 的选取。James-Stein Estimator 假设 $g(\cdot)$ 是高斯分布，Tweedie's formula 则没有。从这个意义上说，Tweedie's formula 适用范围更广 (flexible)，但需要较多的数据来估计 $g(\cdot)$。换一个角度看，当数据不够的时候，往往假设 $g(\cdot)$ 具有某种参数形式会更好一些。类似的情况可以比较最近邻域法和线性回归：最近邻域法是非常 flexible 的，在低维数据分析中很好用，但总是有足够数据支持这种 flexibility 的。但在高维情况下效果就很差。线性模型在高维数据分析中往往表现出惊人的性能，就在于它简单的结构。总之，不能说一个模型越通用就越好，更不能说一个模型越简单就越好。关键看什么情况下用以及怎么用！乔峰打出的少林长拳都是虎虎生成的！

其中，$z$ 是最大似然估计，$rac{d}{dz} \log f(z)$ 可以看做贝叶斯修正。式 (19) 被称为 Tweedie's formula。最神奇的是：Tweedie's formula 并不包含先验分布 $g(\cdot)$，而只用到了 $z$ 的边际分布 $f(z)$。接下来的事件就简单了，根据观察到的经验数据 $z = [z_1, z_2, ..., z_N]$ 直接去估计 $f(z)$。

$$f(z) = \frac{1}{\sqrt{2\pi}} \exp \left( -\frac{(z - \mu)^2}{2} \right)$$
（18）

把 $z$ 看做自然参数，对 $\psi(z) = \log \frac{f(z)}{1/\sqrt{2\pi} \exp(-z^2/2)}$ 关于 $z$ 求导即可得
$$\mathbb{E}(\mu|z) = z + \frac{d}{dz} \log f(z).$$
（19）

12 参见 Elements of statistical learning 第二章。
现在要问的是，除了图1这种结构，还有没有其它结构呢？答案还是肯定的，如图2所示。当 $\mu$ 的状态是离散的时候，这就是著名的 HMM(Hidden Markov Model, 隐马尔科夫链)。当 $\mu$ 的状态是连续的时候，这就是著名的 Kalman filter (卡尔曼滤波)。值得一提的是，多层次线性模型 (Hierarchical linear models) 也源自于此，LMM(linear mixed model, 尼称“林妹妹”吧) 也可以有经验贝叶斯的解释，此处略去 $n$ 个字。

神龙摆尾

古诗云：乱花渐欲迷人眼，浅草才能没马蹄。花太多容易迷失方向，草太深则跑不了马。所以，一定要“浅”才行。

2000年到2008年，Efron 教授主要致力于研究 Large-scale Inference，他有关 False Discovery Rate(FDR) 的经验贝叶斯解释，给人拨云见日的感觉。2008年的时候，Efron 教授突然神龙摆尾，用经验贝叶斯做预测。他用到了 $\mu \sim g(\cdot), \mid z \mid \sim \mathcal{N}(\mu, 1)$，根据 Tweedie’s formula(15) 得到 $\mathbb{E}(\mu|z)$。他观察到一个很有意思的情况：他的结果与 Tibshirani 的 shrunken centroids (SC) 给出的结果很相似。我们可以看到两点：第一，在大规模推理 (Large-scale-inference) 时，有很多 $\mu = 0$。第二，就算 $\mu \neq 0, |\mu|$ 也比实际观察到的 $z$ 要小。比如，实际观察到的 $z = 4$，不能因此认为 $\mu = 4$，经验贝叶斯 (Tweedie’s formula) 告诉我们，$\mathbb{E}(\mu|z) = 2.74$。同样的，$z = -4$ 时，$\mathbb{E}(\mu|z) = -3.1$。这表明真实情况往往没有直接观察到的情况那么极端。

结束语

我要这天，再遮不住我眼；要这地，再埋不了我心；要这信号，都明白我意；要那噪音，都烟消云散！

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https://sites.google.com/site/eeyangc/
用 R 绘制情人节的礼物

林宇

据说笛卡尔死前寄出的最后一封信，里面只有短短的一行：$r = a(1 - \sin \theta)$，这就是有名的心形函数。情人节将至，我用 R 语言的 grid 包画了几幅图片，希望借此平台赠与我相恋五年的男友，也希望与各位统计爱好者分享快乐。

首先，我利用 grid.lines() 把转化为直角坐标系的 $(x, y)$ 两两相连围成心形，构建了一个 heart function 作为基本图形。

$$
\begin{align*}
  x &= 16(\sin t)^3 \\
  y &= 13 \cos t - 5 \cos 2t - 2 \cos 3t - \cos 4t 
\end{align*}
$$

为了得到嵌套心形图案，我使用了 grid 包创建了多个 viewport。viewport 是 grid 包的一个重要特色，此概念类似于 photoshop 的图层。

创建一个 viewport，我们需要设置它的位置、长度和宽度，下图虚线实际上并不出现在 R 的输出之中，但这个矩形区域图层会成为接下来画图的区域。构建了新的 viewport 以后，我们可以用 pushViewport() 命令锁定该图层，使之成为目标区域。我们也可以构建多个 viewport，几个 viewport 之间可以通过命令互相切换。

此外，grid 包允许我们对图形进行复制、旋转、放缩等修改。要旋转心形函数，我们并不需要修改函数本身，而是可以通过旋转 viewport 的方式旋转我们所需要绘制的图形。设置新 viewport，调整 angle 参数，那么在此图层下绘制的任何图形将会被旋转。

利用 viewport 对图形进行修改，我们可以绘制各种有趣的图案，本人只是 grid 包的初学者，如有偏颇之处望多多包涵。最后，祝愿大家情人节快乐！
以下是“情人节礼物”的代码:

```r
library(grid)

# heart function
def heart(lcolor) {
  t <- seq(0, 2*pi, by = 0.05)
  x <- 16*sin(t)^3
  y <- 13*cos(t)-5*cos(2*t)-2*cos(3*t)-cos(4*t)
  a <- (x - min(x)) / (max(x) - min(x))
  b <- (y - min(y)) / (max(y) - min(y))
  grid.lines(a, b, gp = gpar(col = lcolor, lty = "solid", lwd = 3))
}
heart("hotpink")

# rose function
def rose() {
  grid.newpage()
  vp <- viewport(0.5, 0.5, w = 0.9, h = 0.9)
  pushViewport(vp)
  grid.polygon(x = c(0.08, 0.5, 0.94),
               y = c(0.22, 1.03, 0.22),
               gp = gpar(fill = "red", lwd = 3))
  grid.circle(x = 0.5, y = 0.5, r = 0.5,
              gp = gpar(fill = "red", lwd = 3))
  pushViewport(vp)
  grid.text("Happy valentine's day!",
            x = 0.2, y = 1.2,
            just = c("center", "bottom"),
            gp = gpar(fontsize = 20), vp = vp)
  pushViewport(vp)
  heart("hotpink")
  grid.newpage()
  for (j in 1:30) {
    vp <- viewport(0.5, 0.5, w = 0.9, h = 0.9)
    pushViewport(vp)
    heart("hotpink")
  }
  grid.newpage()
  vp1 <- viewport(0.4, 0.5, w = 0.5, h = 0.5, angle = 15)
  pushViewport(vp1)
  heart("red")
  pushViewport(vp2)
  heart("hotpink")
  grid.newpage()
  vp3 <- viewport(-0.65, 1.2, w = 0.3, h = 0.3, angle = -30)
  pushViewport(vp3)
  rose()
}
```

### pattern 1
```
grid.newpage()
pushViewport(viewport(x = 0.1, y = 0.1, w = 0.2, h = 0.2))
grid.newpage()
for (j in 1:30) {
  vp <- viewport(0.5, 0.5, w = 0.9, h = 0.9)
  pushViewport(vp)
  heart("hotpink")
}
grid.newpage()
pushViewport(viewport(x = 0.9, y = 0.27, w = 0.7, h = 0.7, angle = -30))
grid.text("Happy valentine's day!",
          x = 0.2, y = 1.2,
          just = c("center", "bottom"),
          gp = gpar(fontsize = 20), vp = vp)
grid.newpage()
pushViewport(viewport(-0.65, 1.2, w = 0.3, h = 0.3, angle = -30))
grid.newpage()
```

### pattern 2
```
vp1 <- viewport(0.4, 0.5, w = 0.5, h = 0.5, angle = 15)
pushViewport(vp1)
heart("red")
vp2 <- viewport(0.9, 0.27, w = 0.7, h = 0.7, angle = -30)
pushViewport(vp2)
heart("hotpink")
grid.newpage()
vp3 <- viewport(-0.65, 1.2, w = 0.3, h = 0.3, angle = -30)
pushViewport(vp3)
rose()
```

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## 爱情永远寂寞

刘思喆

有人说，爱情是凄美的，没有结局的爱情永远定格在那一刻，才是永恒；有人说，爱情是天使，就像那可爱的丘比特，会带给我们欢乐和甜蜜；还有人说，爱情是恶魔，它一次又一次地带我们到痛苦的深渊。

爱情究竟是什么，让我们看看统计数字诉说的真相：

### 爱情永远寂寞

22996首中文歌曲（844个流行歌手）——不管我们怎么想，他们是这样说的。

这张图形使用了R中进行中文分词的rmmseg4j包、文本挖掘的tm包、关联规则包recommender-

lab，以及社会网络分析的igraph包编制，大致步骤如下：

1. 首先将 22996 首中文歌曲的歌词进行分词；
2. 构建歌曲-词条的关系矩阵 $M$；
3. 再通过关联规则算法，在矩阵 $M$ 中学习，获得 support 至少为 0.01 的所有的“词条-词条”规则；
4. 最后将上述条词规则使用 MDS（Metric Multidimensional Scaling）的布局方式展示在平面上。

让我们看看与“爱情”“永远”“寂寞”相关联的那些词语，不难发现：
爱情、永远、寂寞三个词之间夹杂着幸福、美丽、快乐、感觉、离开、不在、也许、其实、是我、是你、是否、曾经、现在；

永远还覆盖了生命、明天、等待、拥有；

爱情有着眼泪、无法、伤心、感情；

寂寞夹杂着孤单、自由、孤独和沉默。

等待爱情的降临、享受爱情的甜蜜、或是失去爱情的眷顾的各位，这和你的想像一样吗？

Figure 1: 歌词短语关联图形

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2013 ICSA/ISBS Joint Conference

Committees

Advisory Committee

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ISBS Joseph Heyse (Merck Co) and Frank Rockhold (GSK)

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ISBS Mark Chang (Amag Pharma), Frank Bretz (Norvatis), Jie Chen (Merck Serono) and Amit Bhattacharya (GSK)

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ISBS Co-Chair: Mark Chang (Amag Pharma), Frank Bretz (Norvatis). Members: Qing Liu (Jassen), Soumi Lahiri (GSK), Eric Kolaczky (BU), Sandeep Menon (Pfizer), David Ohlssen (Novartis), Cong Chen (Merck), Jianliang Zhang (MedImmune), Richard Vonk (Bayer, Germany), Bill Wang (MSD, China), Yue Wang (BeiGene, China) and Jie Chen (Merck Serono, China).

Short Course Committee

ICSA Co-Chair: Ying Lu (Standard U); Members: Ming Tan (Georgetown U) and Harry Yang (MedImmune).

ISBS Co-Chair: Jie Chen (Merck Serono); Members: Gheorghe Doros (Boston U).

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ICSA Co-Chairs --- Mei-Ling Ting Lee (UMCP), Zhaohai Li (George Washington U); Members: Qing Liu (J & J), Lili Yu (Georgia Southern U), and Zhezhen Jin (Columbia U).

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ISBS Frank Fan (Elan), Hongliang Shi (Millenium Pham)

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Chair --- Zhaohai Li (GWU); Guoqing Diao (GMU), Xiaoyu Dong (FDA), Hongbin Fang (Georgetown U), and Gang Zhen (NHLBI/NIH)

Fundraising Committee

Chair --- Joshua Chen (Joshua_chen@Merck.com); Gang Li (gli@its.jnj.com) Xiaoming Li (Xiaoming.Li@gilead.com), Bo Yang (byang@abbott.com).
Call for Invited Session Proposals
ICSA and ISBS Joint Statistical Conference
Bethesda, Maryland, USA
June 9 to 12, 2013

The International Chinese Statistical Association (ICSA) and the International Society for Biopharmaceutical Statistics (ISBS) are pleased to announce the Joint Statistics Conference to be held from Sunday, June 9 to Wednesday, June 12, 2013, at the Bethesda North Marriott Hotel & Conference Center, 5701 Marinelli Road, Bethesda, Maryland, USA, in the outskirts of the US Capital, Washington DC. The theme of this joint conference is Globalization of Statistical Applications, in recognition of the International Year of Statistics 2013.

The Program Committee is now soliciting proposals for invited paper sessions for the conference. The submission deadline for formal invited session (both oral and poster) proposals is February 1, 2013. Proposals reflecting the theme of the conference are particularly encouraged. Invited sessions will be selected by the Program Committee from those submitted.

Invited sessions typically have 4 speakers (25 minutes each) or 4 speakers plus a discussant (20 minutes each). To submit a formal invited session proposal, please go to the web link http://www.icsa.org/a/s.jsp?d=1198046672 and follow the instructions.

The formal proposal should include the following information:

1. Session title
2. Brief (1-2 paragraphs) description of session
3. Organizer name, affiliation, telephone, and e-mail address
4. Session chair name, affiliation, telephone, and e-mail address
5. Speaker information
   1. Name, affiliation, and e-mail/telephone
   2. Talk title
   3. Indication of whether the speaker has agreed to attend the conference if session is selected
   4. Indication of any conflicts the speaker might have with meeting dates
6. Preferred order of presentations
7. If not selected, whether the session can be moved to invited poster sessions.

For more information, visit the ICSA website at http://www.icsa.org/2013/
Call for Short Course Proposals

The 2013 Joint Statistics Conference by The International Chinese Statistical Association (ICSA) and the International Society for Biopharmaceutical Statistics (ISBS) will be held from Sunday, June 9 to Wednesday, June 12, 2013, at the Bethesda North Marriott Hotel & Conference Center, 5701 Marinelli Road, Bethesda, Maryland, USA, in the outskirts of the US Capital, Washington DC. This will be the 22nd annual symposium for ICSA, and the 3rd international symposium for ISBS. The theme of this joint conference is Globalization of Statistical Applications, in recognition of the celebration of the International Year of Statistics 2013. The Symposium will offer Student Paper Awards and Travel Grants to encourage student members of ICSA to participate and present their research work at this annual meeting.

The Short Course Program Committee (SCPC) creates the short course program based on the selections from the submitted offerings. Members of ICSA and ISBS are encouraged to submit and co-sponsor proposals based on the interests of their membership. Short-courses can be offered as in a half-day or a full-day format.

All course topics are welcomed. The following is a list of topics that may be of great interest to members of ICSA/ISBS Applied Statistics Symposium attendees:

- Bayesian Analysis
- Clinical Trials
- Missing Data
- Bioequivalence and/or Biosimilar
- Data Mining
- Medical Device and Diagnostic Medicine
- Statistical Methodologies for Safety Assessment
- Multiple comparison procedures
- Experimental Design
- Applied Multivariate Analysis
- Statistical Quality Control
- Nonparametric Analysis
- Categorical Data Analysis
- Survival Analysis

Submission of Proposal: Proposal should be received no later than February 1, 2013. The submission should include:

- An abstract of the short course;
- A list of content and outline of the course;
- Name, occupational affiliation, mailing address, phone/fax numbers and email address of the instructor;
- A short introduction of the instructor;
- The format of the short course (either a half-day or a full-day);
- A copy of the ICSA membership application form for non-members.

The following is a timeline for the ICSA/ISBS Courses: December 11, 2012 --- January 15, 2013 Course proposals are open for submission for the 2013 program.
February 1, 2013 --- SCPC selects Short Course offerings. The selected presenters are sent a presenter package containing forms that are due back to the SCPC chair by March 1.
March 15, 2013 --- Course information is posted on the ICSA/ISBS Symposium web page. Interested members can register for Short Course offerings when ICSDA/ISBS registration opens.

(Member application/renew forms can be found from http://www.icsa.org.) All materials should be packaged into one .zip file and sent by email to ICSA Short Course Program Committee at ICSA2013SCPC@gmail.com (please don’t send directly to the committee co-chairs).

Short Course Committee Co-Chairs
Ying Lu, Stanford University ylu1@stanford.edu
Jie Chen, Merck Serono jie.1.chen@merckgroup.com

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Student Paper Awards and Travel Grants Announcement

The 2013 Joint Statistics Conference by The International Chinese Statistical Association (ICSA) and the International Society for Biopharmaceutical Statistics (ISBS) will be held from Sunday, June 9 to Wednesday, June 12, 2013, at the Bethesda North Marriott Hotel & Conference Center, 5701 Marinelli Road, Bethesda, Maryland, USA, in the outskirts of the US Capital, Washington DC. This will be the 22nd annual symposium for ICSA, and the 3rd international symposium for ISBS. The theme of this joint conference is Globalization of Statistical Applications, in recognition of the celebration of the International Year of Statistics 2013. The Symposium will offer Student Paper Awards and Travel Grants to encourage student members of ICSA to participate and present their research work at this annual meeting.

Qualification: The applicant must be an ICSA member at the time of manuscript submission, a degree candidate in any term during the academic year 2013-2014 at an accredited institute and be able to register and present the research work at the 2013 symposium.

Manuscript Requirement: Manuscript should be prepared double spaced using Biometrics or JASA guidelines for authors. Excluding tables and figures, the manuscript must be no more than 20 pages using at least one-inch for all margins and no smaller than 12-point font. The research work must be relevant to application in a variety of fields including biomedicine, finance, business, etc. The manuscript may be co-authored with a faculty advisor and/or a small number of collaborators, although the student must be the first author.

Submission of Manuscript: Manuscript should be received no later than March 15, 2013. The submission should include:

- A copy of the ICSA membership application form for non-members.

(Membership application/renew forms can be found from http://www.icsa.org.) All materials should be packaged into one .zip file and sent by email to ICSA Student Award Committee at ICSA2013STUDENT@gmail.com (please don’t send directly to the committee co-chairs).

Review and Selection Process: Members of the Student Award Committee will receive blind manuscripts from the Committee Chair and review them based on the following criteria:

- The manuscript should be well motivated by an application to the specific field(s);
- The methodology developed should be applicable to the motivating problem. Inclusion of an application to a practical study will be favorably considered;
- Organization and clarity of the presentation will be considered as well.

Awards: Up to six student award winners (five Student Travel Awards and one Jiann-Ping Hsu Pharmaceutical and Regulatory Sciences Student Paper Award) will be selected by the committee. Each winner will receive a plaque, an award for travel and registration reimbursement up to $1000 or a cash award of $550, whichever is bigger, as well as a free registration for a short course. Winners will be notified around April 30, 2013.

Student Award Committee Co-Chairs:
Mei-Ling Ting Lee, University of Maryland at College Park, mltlee@umd.edu
Zhaohai Li, George Washington University, zli@gwu.edu

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Upcoming Events

Young Statisticians Conference 2013
February 7 --- February 8, 2013
Melbourne, Australia
http://www.ysc2013.com/

ASA Conference on Statistical Practice 2013
February 16 --- February 18, 2013
New Orleans, Louisiana, USA
http://www.amstat.org/meetings/csp/2013/index.cfm

SAMSI--NCAR Workshop on Massive Datasets in Environment and Climate
February 13 --- February 15, 2013
Boulder, Colorado, USA

SAMSI--SAVI Workshop on Environmental Statistics
March 4 --- March 6, 2013
Research Triangle Park, NC, USA
http://www.samsi.info/workshop/samsi-savi-workshop-environmental-statistics-march-4-6-2013

Conference on Advanced Statistical Methods for Underground Seismic Event Monitoring and Verification
March 7 --- March 8, 2013
Arlington, VA, USA
http://stat.rutgers.edu/conferences/monitoringandverification2013

2013 ENAR/IMS Meeting
March 10 --- March 13, 2013
Orlando, FL, USA
http://www.enar.org/meetings.cfm

Columbia--Princeton Probability Day 2013
March 29, 2013
Princeton, NJ, USA
http://orfe.princeton.edu/conferences/cp13/

The 2013 ICSA/ISBS Joint Conference
June 9 --- June 12, 2012
Bethesda, Maryland, USA
http://www.icsa.org/2013/

IMS-China International Conference on Statistics and Probability 2013
June 30 --- July 4, 2013
Chengdu, Sichuan, China
http://imscn2013.swufe.edu.cn/

29th European Meeting of Statisticians
July 20 --- July 25, 2013
Budapest, Hungary

First Asian International Statistical Institute Satellite Meeting on Small Area Estimation
September 1 --- September 4, 2013
Bangkok, Thailand
http://www.math.sc.chula.ac.th/sae2013

The First International Conference on Statistical Distributions and Applications
October 10 --- October 12, 2013
Mt. Pleasant, MI, USA
http://people.cst.cmich.edu/lee1c/icosda/

The 69th Deming Conference on Applied Statistics
December 9 --- December 13, 2013
Atlantic City, NJ, USA
http://demingconference.com/
Professional Opportunities

For details and contacts about all posts, see http://www.icsa.org/job/index.html.

Appointments at all levels at Shanghai Jiao Tong University

Shanghai Jiao Tong University, one of the top universities in China, is undertaking a major expansion aimed at becoming one of the world’s leading centers of scientific research. A major initiative of this expansion is the establishment of the Center for Statistical Sciences, initially hosted in the Institute of Natural Sciences (http://ins.sjtu.edu.cn/), led by world class faculty conducting research in statistical theory and methodology, and collaborating with researchers in other disciplines, including biology, engineering, finance, management, medicine, and public health. It will also develop a rigorous education and training program for undergraduate and graduate students. The university has committed significant resources to ensure the success of this center.

Appointments at all levels, from postdoctoral fellowship to Chair Professorship, are available to candidates with strong or promising academic credentials.

We are seeking applicants in all major areas of statistical research to join our center for theoretical and methodological research. Successful candidates will also be charged to develop a vibrant and visible training program in statistics.

The Position Qualifications: Ph.D. in Statistics, Biostatistics, or related fields.

The Salary Range: Very competitive salary.

The Benefits: Highly attractive benefits and start-up packages.

ICSA Bulletin Calls for Submission

The International Chinese Statistical Association (ICSA) Bulletin welcomes contributions or articles of general interest to our members. Articles may be in English or Chinese. Both \LaTeX\ and MS Word are accepted. A \LaTeX\ template is available at http://www.icsa.org/bulletin/.

Contributions to any of the following columns are welcome.

Blog Spot  Blogs by statisticians that are of general interest.

Controversial Issues  Solved or unsolved controversial statistical issues, examples, recommendations when possible, and future perspectives.

Conversation  Interview with statistician who has made important impact on statistical science, practice, education, or ICSA.

Looking Back  Memoirs looking back at statistics, statisticians, and beyond.

People News  Any news about members, such as awards, career, editorship, election, honor, media coverage, moving, promotion, and so on.

R ‘R’ Us  Communications on using R and more generally, statistical computing.

Stalligraphy  Calligraphy artwork by statisticians --- an authentic way to celebrate the International Year of Statistics from the Chinese culture.

Statisticians at Work  What statisticians do in their jobs, be it academic, industrial, or governmental.

Submissions are of course not limited to the existing columns. Ideas and volunteers are always welcome. 众人拾柴火焰高. We need all the help from our members to better serve our members.

The deadlines are December 15 for the January issue, and June 15 for the July issue. Late contributions need to be negotiated with the editor; otherwise, they will be published in the next issue.

If you have questions/comments/suggestions, please do not hesitate to contact Jun Yan, Editor-in-Chief of ICSA Bulletin, at ICSAbul@gmail.com.

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**Name**

(English)

(Chinese)

**Affiliation:**

**Gender (optional):**

**Address**

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| Total Amount Paid: | US$|

**Statistical Area of Interest (circle all applicable):**

- A: Agriculture
- B: Business / Economics
- C: Computing / Graphics
- D: Education
- E: Engineering
- F: Health Sciences
- G: Probability
- H: Social Sciences
- I: Biostatistics
- N: Theory & Methodology

**Would you like to join the Biometrics Section (please circle your answer)?**

Yes  No

**Please Make Check Payable to:** I.C.S.A. **Mail This Form & Fees to:**
ICS A c/o Shuyen Ho, Statistics and Programming GSK, GlaxoSmithKline, 5 Moore Drive, PO Box 13398, Research Triangle Park, NC 27709, USA
Members attending the ICSA banquet at a local Chinese seafood restaurant in San Diego at JSM 2012.

Xiao-Li Meng, Professor at Harvard University and one of the first recipients of the Pao-Lu Hsu Award, at the announcement with ICSA president Ivan Chan.

Jing-Shiang Hwang, Research Fellow at Institute of Statistical Science, Academia Sinica, Taiwan, receiving Outstanding Service Award from ICSA president Ivan Chan.

Members attending the ICSA banquet at a local Chinese seafood restaurant in San Diego at JSM 2012.
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Keynote speakers include Prof. Marie Davidian, North Carolina State University and the 2013 President of the American Statistical Association (ASA); Dr. Nancy Geller, Director of Office of Biostatistics Research, National Heart Lung and Blood Institute, and past President of the American Statistical Association (ASA); Dr. Rob Hemmings, Statistics Unit Head at the UK Medicines and Healthcare Products Regulatory Agency and Chair of the Scientific Advice Working Party (SAWP); Dr. Lisa LaVange, Director of Office of Biostatistics, CDER, Food and Drug Administration. We are also delighted to confirm Prof. Xiao-Li Meng, Dean of the Graduate School of Arts and Sciences at Harvard University as the conference banquet speaker.

There will be short courses, invited sessions, contributed sessions, and poster presentations. Details will be announced on our website http://www.icsa.org/2013/ and http://www.isbiostat.org/main/.

We at ICSA and ISBS join the strengths and efforts to make this conference a unique and memorable learning experience. We sincerely welcome all ICSA and ISBS members, and all people interested in application of statistics to participate, organize invited sessions, submit papers to the contributed sessions, and provide suggestions. The executive committee welcomes suggestions and help from all interested members.

Questions and suggestions can be addressed to Aiyi Liu at liua@mail.nih.gov or Mark Chang at mchang@amagpharma.com.

The Executive Committee for 2013 ICSA–ISBS Joint Statistical Symposium