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International Chinese Statistical Association

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Bulletin

會刊

**The Beginner's Guide to Getting Things Done**

**China Big Data Collaboration to Improve Patient Care**

**Yi's FDA Story: Where Statistics Met Regulation: 1993**

**Careers and Personal Relationships**

**Not Happy? Change Your Mental Model**

**COVID Coping and The Law of Most People**

**Why (good) Statisticians Tend to be Happier**

**2020 ICSA Awards**

**ICSA 2020 Student Paper Award Recipients**



# ICSA Bulletin

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## Editorial Staff

### Editor-in-Chief

Yi Huang  
yihuang@umbc.edu

### Editorial Assistant

Xiaoyu Cai  
nkcaixiaoyu@gmail.com

### Executive Committee

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Jianguo (Tony) Sun  
sunj@missouri.edu

#### Past President

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heping.zhang@yale.edu

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wuc@nhlbi.nih.gov

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mengling.liu@nyulangone.org

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fur@ohsu.edu

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# From the Editor

Yi Huang

Dear ICSA Members,

Welcome to the 2020 Jul issue of the ICSA Bulletin. The worldwide pandemic of coronavirus, challenging election year, and a time of great national division and anxiety, have forced us to confront a year like no other in USA. Over this difficult time, on behalf of the editorial board and ICSA leadership team, I want to send our best wishes to you, your family, and your community, for a safe and healthy year! We are in this crisis together. When “I” is replaced with “we”, even “illness” become “wellness”!

The theme of this issue is empowering our new working-from-home (WFH) lifestyle for a productive year. With more and more people fighting procrastination and distractions and managing uncertainty and risk in life, keeping focus and productive in year 2020 become much harder. To address this concern, one Asian Efficiency article in Jan issue introduced the Time, Energy, and Attention (TEA) framework, the three pillars of productivity to unlock full potential. Our second Asian Efficiency article in this issue goes one step further and emphasizes the system, called “*The Beginner’s Guide to Getting Things Done*”. Remember the phrase “You do not rise to the level of your goals. You fall to the level of your system.”? That’s the purpose. Based on Asian Efficiency’s blog post, Getting Things Done (GTD) is one of the most popular productivity systems out there today. GTD comes from David Allen’s book - *Getting Things Done: The Art of Stress-Free Productivity* (2001, 2015). This article is more than a book review, but summarizes the key concepts/issues and steps for implementation, e.g. mind set, 5 simple steps for getting things done, and introduces the best productivity apps and tools for adopting GTD. Asian Efficiency’s TEA framework and GTD system have been instrumental in reshaping my work efficiency and work-and-life balance. I am grateful to have Asian Efficiency’s permission to share their thoughts here.

The second featured article of this issue come from Dr. Yi Tsong, under his “Yi’s FDA Story: Where Statistics Met Regulation”. With more than 30yrs of FDA experience as a leader and top statistical expert in drug safety, new drug research and nonrandomized studies, and many other areas, Yi shares his remarkable insider stories about statistics in important FDA events with a great sense of humor. His 1993: *Halcion (Triazolam) and FDA Ad-*

*visory Committee Meeting on Neuro-pharmacological Drug Products* is a great show case providing the insights on how statistics makes important regulatory and policy impacts. The third feature article is *China Big Data Collaboration to Improve Patient Care*, by Drs. X. Zhi, J. Li, Y. Huang, O. Jin, W. Yu, K. Zou from Pfizer Inc. This article shares the tremendous opportunities in China on how to gain medical insights through real world evidence. Please, read these two interesting papers.

This issue features four column articles. Dr. Hans Rudolf Künsch shares his thoughts on career and personal relationships, and provides insightful tips in “Hints from Hans”. Dr. Terry Speed shares his wisdom on overcoming unhappy/ sad situations, and identify the potential sources, and propose the approach of changing mental model in his column “Terence’s Stuff”. Dr. Xiao-Li Meng points out *why (good) statistician tend to be happier and COVID coping and the law of most people* in his “XL-Files”. Reading those column articles not only will bring you joy and insights, but also a big smile on your face.

Turning to ICSA business, this issue includes letters from the 2020 ICSA President Jianguo (Tony) Sun, ICSA Executive Director Mengling Liu, the results on 2021 President-Elect and directors of ICSA board (2021-2023). Also, this issue highlights the recipients of the 2020 ICSA awards; new fellows of ASA and IMS in ICSA family, and includes ICSA 2020 financial report, *Statistics in Biosciences (SIBS)* co-editors’ report; *Statistica Sinica* co-editors’ report; reports from the 2020 program committee; 2020 student paper awards and travel grant recipients in 2020 ICSA Applied Statistical Symposium, with the announcements of upcoming meetings/ conferences at the end.

Finally, I would like to thank all the authors and contributors, Xiaoyu Cai, and ICSA executives and leadership team for their strong support and enthusiasm for the ICSA Bulletin. Best wishes for a safe and healthy year!



Yi Huang, Ph.D.  
 Editor-in-Chief, ICSA Bulletin  
 Associate Professor  
 Department of Mathematics and  
 Statistics  
 University of Maryland, Baltimore  
 County

# From the 2020 President, ICSA

*Jianguo (Tony) Sun*



Dear ICSA Members and Friends of ICSA,

Welcome to the second issue of 2020 ICSA Bulletin. I am so happy to talk to you this way and hope that both you and your family members have been healthy and doing well in this difficult and unprecedented year caused by COVID-19. Like many people said, 2020 is definitely a difficult and challenging year but also good in the sense that it has been teaching us a lot and made us to learn so many new things about our own life and society as well as many other things no matter we want or not.

At the beginning of the year, I am sure that like ICSA, each of you has a great plan for the year but has to make changes. ICSA China Conference series have been one of ICSA major, yearly events and as you know, we had to cancel 2020 one that was originally scheduled to be held at Zhongnan University of Economics and Law, Wuhan, China during June 26 —29, 2020. Before the cancelation, a great deal of effort and work from both ICSA side and local side had been put into it and among others, I especially want to thank the Program Co-Chairs Drs. Ying Zhang and Hui Zhao, who had organized an excellent program, and the Local Organizing Committee Chairs, Drs. Hu Zhang and Qinglong Yang, who had planned and booked almost everything needed for a great conference. Also as you may know, we had to first postpone our 2020 Applied Statistics Symposium from May to December 13 — 16, 2020 and then changed it to a virtual event for the same time. To make this happen and have a great conference, Dr. Hulin Wu, the meeting's Executive Committee Chair, and many people in various committees have spent countless hours and been working on it hard and diligently. In particular, they have designed an excellent program, consisting of three outstanding keynote speakers and a talent show, and I hope that all of you can attend it for all or parts of it given the convenience of a virtual conference and enjoy.

At this moment, we hope that 2021 ICSA Applied Statistics Symposium can still be held in person as planned at Washington DC and although the specific time and location cannot be decided at this

moment because of COVID-19, Dr. Guoqing Diao along with others has been working hard on these as well as organizing the scientific program. Also Drs. Yingying Fan and Chunjie Wang have been working hard on the scientific program for 2021 ICSA China Conference that we hope can still be held as planned at Xian University of Finance and Economics, Xian, China during July 2 —5, 2021. I am very sure that they and their committee will put up an excellent program. Currently Dr. Zhezhen Jin, the Chair of ICSA Program Committee, and his committee members are working hard too for other ICSA conferences in the near future and I encourage everyone to contact Dr. Jin if you have any suggestions.

Although COVID-19 made it hard, I am happy to report that our ICSA yearly election was carried out smoothly and Dr. Zhezhen Jin from Columbia University was elected as the ICSA President-elect for 2021 along with five newly elected Board Members, Drs. Shu-Hui Chang, Yong Chen, Chenlei Leng, Xiaodong Luo and Yang Song. Congratulations to them and many thanks to Dr. Joan Hu, the chair of ICSA Nomination for Election Committee, and the committee members for their excellent work. On a similar matter, we also recently chose Dr. Joan X. Hu, Professor from Simon Fraser University, to join the Editors-in-Chief team for Statistics in Biosciences, replacing Dr. Mei-Cheng Wang, who will finish her term at the end of 2020 and has made tremendous contributions to the journal. In addition, Dr. Ming Wang from Pennsylvania State College of Medicine has been chosen to be ICSA Bulletin Editor, replacing Dr. Yi Huang from the University of Maryland, Baltimore County, who also will finish her term at the end of 2020 and has made great contributions to the Bulletin. Congratulations to Drs. Hu and Wang and many thanks to Drs. Wang and Yi for their excellent services and to Dr. Yichuan Zhao, the chair of ICSA Publication Committee, and the committee members for their hard work on this.

Some of you may have already known that early this year, we lost a great friend and member, Dr. Xi-anrong Yin, Professor at the Department of Statistics of University of Kentucky (please see the obituary below for more information). Before passing, Dr. Yin served as the chair of ICSA Awards Committee and had made so much contributions to our society. ICSA will organize a memorial session for Dr. Yin during the 2020 Applied Statistics Sympos-

sium and I hope that many of you could attend and share great memories of him.

To conclude, I wish to thank all of you for your support and participation of ICSA activities and for being stay in connected with each other. Especially loud applauds go to ICSA Executive Members and Committee Chairs for their outstanding leadership and efforts during this special time. I hope that we all will stay connected in our big ICSA family and think of others as well as making our contributions to the fight against COVID-19. I truly believe that

our association will get better, bigger and stronger and each of you will get better too. Please keep you and your family members safe and healthy and look forward to the near future when we can greet and work with each other face to face.

*Jianguo (Tony) Sun, Ph.D.  
2020 President, ICSA  
Professor of Statistics  
University of Missouri*

## From the Executive Director 2020-2022

*Mengling Liu*



Dear ICSA members,

In an ordinary year, this report from the executive director would have included all the exciting ICSA activities that had happened and I would have shared with you many cheerful experiences. To

say the least, 2020 is not an ordinary year. COVID-19 has interrupted our professional and personal life, and inflicted stress and pain on all of us. But on the other hand, COVID-19 tested and verified our community's strength and resilience. Our members from academia, industry, and government have devoted their efforts in fighting the pandemic from conducting clinical trials, modeling infection, developing guidelines, to continuing to mentor and teach next generations of statisticians. ICSA is proud of, and more importantly, grateful to all our members.

In May and August, 2020, we held our annual board meetings via Zoom. The online meetings made it possible for a very high attendance to the meetings by our board members and various committee members. During the meetings, board members have approved the ICSA 2020 awards, candidates for election, and final election results. In ad-

dition, updates to the ICSA book series and journals were presented to the board. During 2020, we launched the ICSA new main website and new conference registration system. We expect to roll out our new membership system in early 2021 and, hope to improve our member experience by providing better functionality and interactions to our members. Meanwhile, if you have any comments or suggestions, please feel free to let me know.

In December 13-16, 2020, The ICSA 2020 Applied Statistics Symposium will be held virtually, and is planned with short courses, scientific sessions, poster sessions, and social events including general member meeting, award ceremony, and talent show. We look forward to e-meeting you at the symposium.

Our plans for events in 2021 still face many uncertainties, but our mission to continue building our society remains. It is even more essential than ever to support our members and to have our members' support for ICSA. We look forward to your participations in ICSA activities and programs.

*Mengling Liu, Ph.D.  
ICSA Executive Director (2020-2022)  
Professor of Biostatistics  
Department of Population Health  
New York University Langone Health*

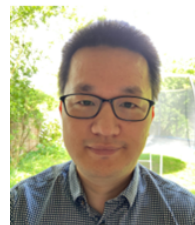
# Results of 2020 ICSA Election

## 2021 President-Elect

Zhezhen Jin (Columbia University)



- Chenlei Leng (University of Warwick)



## Directors of ICSA Board (2021-2023)

(alphabetical order)

- Shu-Hui Chang (National Taiwan University)



- Xiaodong Luo (Sanofi)



- Yong Chen (University of Pennsylvania)



- Yang Song (Vertex)



# 2020 ICSA Awards

## Distinguished Achievement Award

*In recognition of the distinguished achievement in statistical research and unselfish support of the association*

**Ming-Hui Chen** PhD, University of Connecticut



For outstanding contributions to research in Bayesian methodology, Bayesian computation, categorical data analysis, meta-analysis, survival data analysis, and analysis of missing data; for innovative interdisciplinary work within industry and medicine, especially in advancing the understanding and the management of prostate cancer and complications from its treatment; and for significant contributions to the development and growth of ICSA and exceptional leadership for the statistical community.

## Outstanding Service Award

*In recognition and with sincere appreciation for the dedicated effort, unselfish support, and outstanding service.*

**Hongzhe Lee** PhD, University of Pennsylvania



For outstanding contributions to ICSA serving as the Scientific Program Committee Chair of The 11th ICSA International Conference held at Hangzhou, Zhejiang, China, December 22 —22, 2019.

**Gang Li** PhD, Johnson & Johnson



For outstanding contributions to ICSA serving as ICSA Executive Director during 2017 — 2019.

**Aiyi Liu** PhD, National Institute of Health



For outstanding contributions to ICSA in many ways including serving as ICSA 2018 President.

## Outstanding Young Researcher Award

*In recognition of the outstanding research in statistical theory, methodology, and/or applications.*

**Guan Yu** PhD, University of Buffalo



For his impact on statistical machine learning, in particular, his fundamental contributions to graph-based statistical learning methods and supervised learning methods for block-missing multi-modality data.

**Xin Zhang** PhD, Florida State University



For his important and novel contributions to multivariate analysis, in particular, his outstanding research in dimension reduction, envelope methods, discriminant analysis, optimization, and tensor data analysis with applications to neuroimaging.

## President's Citation

*In grateful appreciation of the generosity, dedication, and devoted effort for ICSA.*

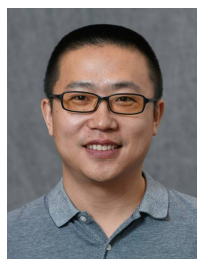
**Zhezhen Jin** PhD, Columbia University



For contributions to ICSA serving as Scientific Program Committee Chair of 2019 ICSA China Conference held at Nankai University, Tianjin, China, July 1 – 4, 2019.

at Raleigh, North Carolina, USA, June 9 – 12, 2019.

**Wenbin Lu** PhD, North Carolina State University



For contributions to ICSA serving as the Chair of the Executive Organizing Committee of 2019 ICSA Applied Statistics Symposium held

## Significant Contribution Awards

- Dr. Donglin Zeng, University of North Carolina at Chapel Hill
- Dr. Kai Zhang, University of North Carolina at Chapel Hill
- Dr. Qing Yang, Duke University
- Dr. Shu Yang, North Carolina State University
- Dr. Luo Xiao, North Carolina State University
- Dr. Yonggang Yao, SAS Inc.
- Dr. Haoda Fu, Eli Lilly and Company

## New Fellows of ASA

- **Kwun Chuan Gary Chan**, University of Washington. *For outstanding contributions to the methodology of preferential sampling design, observational data, and complex lifetime data; for substantive biomedical applications; and for dedication to the mentoring of junior statisticians and health researchers.*
- **Chung-Chou H. Chang**, University of Pittsburgh. *For demonstrated ability to advance the field of biostatistics; for being an invaluable collaborator and co-investigator for a large number of clinical researchers; and for being a superb teacher and mentor of students throughout the health sciences.*
- **Yong Chen**, University of Pennsylvania. *For major contributions to the methodology of evidence synthesis; for outstanding research in inference under nonstandard conditions, robust inference, and composite likelihood; for bridging statistics and informatics; and for service to the profession.*
- **Yuan Ji**, The University of Chicago. *For pioneering contributions to statistical methodology and application, including interval-based dose finding, big data cancer genomics, and bioinformatics using robust Bayes approaches; for providing exemplary public user interfaces; and for exemplary mentorship and service.*
- **Liang Li**, MD Anderson Cancer Center. *For excellent and sustained statistical research and collaboration in the analysis of observational longitudinal cohort studies and chronic disease research and for outstanding service to the profession.*
- **Qizhai Li**, Chinese Academy of Sciences. *For outstanding contributions to statistical methodology in cancer genetics and genetic epidemiology, particularly in genomewide association studies and candidate gene analysis, and for key contributions to diagnostic medicine and high-dimensional data analysis in biomedical research.*
- **Jason Jinzhong Liao**, Merck & Co., Inc. *For innovative statistical methods and applications in the pharmaceutical industry; for advancing comparability/ biosimilars studies, agreement studies, and assay development; for bringing life-saving drugs to market; and for extensive service to the profession.*
- **Ching-ti Liu**, Boston University. *For outstanding contributions and strong leadership in both the development of innovative statistical methods and in collaborative research to elucidate the genetic basis of complex human traits and for dedicated service to the profession.*
- **Sheng Luo**, Duke University. *For excellent contributions to statistical methods in longitudinal*



*and survival analysis; for scientific contributions to the field of neurological diseases; for exemplary mentorship of students; and for significant service to the profession.*

- **Yongming Qu**, Eli Lilly and Company. *For substantial and sustained contributions to statistical methodology for clinical trials and drug development; for significant influence and impact on bringing new drugs from research to market; and for excellent service to the profession.*
- **Michael Rosenblum**, Johns Hopkins University. *For outstanding contributions to statistical methodology and applications, especially with respect to the adaptive design and optimal analysis of randomized trials.*
- **Damla Senturk**, University of California, Los Angeles. *For methodological contributions in semiparametric modeling and functional data analysis; for innovative applications in neuroscience and other allied disciplines; for outstanding teaching and mentoring; and for exemplary service to the profession.*
- **Xiaofeng Shao**, University of Illinois at Urbana-Champaign. *For pioneering non-*

*parametric inference for time series and high-dimensional inference using nonlinear dependence metrics, especially in developing self-normalization for dependent data and bootstrapping time series, and for excellence in student mentoring and service to the profession.*

- **Yiyuan She**, Florida State University. *For novel and sustained contributions to high-dimensional and robust statistics; for promotion of sound application of statistical theory and optimization in signal processing and machine learning; and for excellence in mentoring, instruction, and service to the profession.*
- **Haonan Wang**, Colorado State University. *For pioneering work in object-oriented data analysis; for fundamental contributions to statistical learning, spatial statistics, and model selection; and for service to the profession.*
- **Zhengyuan Zhu**, Iowa State University. *For excellence in survey practice; for superb contributions to statistical theory and methods in spatial statistics, spatial sampling design, survey statistics, and functional data analysis; and for service to the profession.*

## New Fellows of IMS

- **Guang Cheng**, Purdue University: *For outstanding work in methodology and theory of statistics, especially in high dimensional data, semiparametric estimation and inference, big data, and machine learning.*
- **Chenlei Leng**, University of Warwick: *For fundamental contributions to the theory and practice of high-dimensional statistics, statistical machine learning, model selection, and network data analysis.*
- **Wei Pan**, University of Minnesota: *For his important contributions to survival analysis, correlated data analysis, statistical learning, bioinformatics, and applications to biology and medicine, and for his dedicated services to the profession.*
- **Lily Wang**, Iowa State University: *For contributions to spatial, survey, image and functional analysis using nonparametric and semiparametric methods, especially to partially linear models, confidence envelopes and bivariate smoothing.*
- **Ying Wei**, Columbia University: *For contributions to the development, dissemination, and application of mathematical statistics.*
- **Grace Y. Yi**, University of Western Ontario: *For research excellence in developing theory and methods for the analysis of survival data and longitudinal data in statistical and biostatistical applications, and for world-leading contributions to the analysis of missing and mismeasured data.*
- **Li-Xin Zhang**, Zhejiang University: *For important contributions to difficult problems in probability and statistical inference; and for excellence in mentoring and services.*
- **Xiao-Hua Zhou**, Peking University: *For influential contributions to the field of diagnostic medicine; for significant contributions to causal inference methods in clinical trials; for significant work in the analysis of health care cost data; and for mentorship and editorial service.*

# Statistica Sinica Co-Editors' Report

*Yuan-chin Ivan Chang, Hans-Georg Muller and Yazhen Wang*

## Submissions and Acceptance Statistics

In the past 12 months (August 1, 2019 to July 31, 2020), 468 manuscripts were submitted to *Statistica Sinica*, which include 468 original articles (see Table 1). The numbers of manuscripts submitted and accepted for the past six years are shown in Table 2. The submission and acceptance rates during 2015 to 2017 is higher because of the special issues, and the rate in the past 12 months is slightly lower than the rate of 2019. The review status for the past three years is displayed in Table 3, and the top 10 countries with the highest submissions for the past three years are shown in Table 4.

**Table 1.** Manuscript received from August 2019 to July 2020.

Manuscript Type	Number of Manuscripts	Percentage
Original Article	468	100.0%
Total	468	

**Table 2.** Submissions and acceptances for the past 6 years.

	Aug 2014 – Jul 2015	Aug 2015 – Jul 2016	Aug 2016 – Jul 2017	Aug 2017 – Jul 2018	Aug 2018 – Jul 2019	Aug 2019 – Jul 2020
Acceptance	76	104	150	146	88	81
Submission	409	567	531	486	450	468

**Table 3.** Review status for the past 3 years.

	Aug 2017–Jul 2018		Aug 2018–Jul 2019		Aug 2019–Jul 2020	
Rejected w/o external review	227	46.5%	220	48.8%	176	37.4%
Rejected with external review	99	20.3%	109	24.2%	132	28%
Rejected with revision allowed	56	11.5%	43	9.5%	50	10.6%
Major/Minor revision	1	0.2%	2	0.4%	23	4.9%
First submission under review	0	0%	0	0%	31	6.6%
Revision under review	0	0%	1	0.2%	17	3.6%
Withdrawn	2	0.4%	0	0%	2	0.4%
Accepted	103	21.1%	76	16.9%	40	8.5%
Total	488		451		471	

**Table 4.** Top ten countries with the highest submissions for the past 3 years.

Rank	Aug 2017 - Jul 2018		Aug 2018 - Jul 2019		Aug 2019 - Jul 2020	
1	USA	171 (35.2%)	USA	141 (41.1%)	USA	127 (29.8%)
2	China	108 (22.2%)	China	108 (31.5%)	China	121 (28.4%)
3	India	22 (4.5%)	Canada	19 (5.5%)	H.K.	17 (4.0%)
4	Canada	16 (3.3%)	Italy	12 (3.5%)	Canada	15 (3.5%)
5	UK/Iran	16 (3.3%)	India	12 (3.5%)	UK	14 (3.3%)
6	H.K.	16 (3.3%)	Iran	11 (3.2%)	Iran	12 (2.8%)
7	Taiwan	15 (3.1%)	Taiwan	10 (2.9%)	Singapore	10 (2.3%)
8	Australia	12 (2.5%)	Spain	10 (2.9%)	Taiwan	9 (2.1%)
9	Egypt/ Germany	11 (2.3%)	H.K.	10 (2.9%)	Australia/ Japan	8 (1.9%)
10	Korea	11 (2.3%)	Germany	10 (2.9%)	Saudi Arabia	7 (1.6%)

## Manuscript Processing Time

Table 5 shows the turnaround statistics of initial decision for the past three years, with the decision times censored on October 19, 2020. About 75% of the editorial decisions during 2019-2020 take less than 99 days, but 5% take over 171 days.

**Table 5.** Percentiles of review time in days for the past 3 years.

Period	5th	25th	50th	75th	95th	Sample Size
Aug 2017 – Jul 2018	3	9	25	95	160	484
Aug 2018 – Jul 2019	3	10	29	101	171	450
Aug 2019 – Jul 2020	5	13	31	99	171	441*

\*Additional 27 manuscripts awaiting initial decision

## Backlog for Publication

In the past year, we have published five issues containing 126 articles. There remain 139 accepted manuscripts waiting to be published. Among them, 22 will appear in general issue in Jan 2021. The backlog is about 18 months from acceptance to publication.

## Rankings and Impact Factors

Table 6 shows the ranks of *Statistica Sinica* based on the 2-Year Impact Factor and the 5-Year Impact Factor provided by the Journal Citation Reports (JCR) in the area of Statistics and Probability from 2011 to 2019. Table 7 shows the ranks of *Statistica Sinica* in Scimago Journal Rankings among all journals of Statistics and

Probability in the Scopus database from 2011-2019. The ranking is performed using the algorithm Google PageRank.

**Table 6.** JCR rankings for recent 9 years.

Year	Number of Journals	Ranking (2-Year Impact Factor)		Ranking (5-Year Impact Factor)	
2019	124	72	(0.968)	67	(1.230)
2018	123	71	(0.947)	66	(1.256)
2017	123	71	(0.886)	51	(1.399)
2016	124	70	(0.899)	46	(1.632)
2015	123	66	(0.838)	42	(1.611)
2014	122	44	(1.158)	36	(1.591)
2013	119	37	(1.226)	44	(1.365)
2012	117	25	(1.440)	41	(1.418)
2011	116	49	(1.017)	51	(1.167)

**Table 7.** SCImago journal rankings for recent 9 years.

Year	Total Number of Journal	Journal Rank	Quartile
2019	246	41	Q1
2018	219	41	Q1
2017	196	23	Q1
2016	183	26	Q1
2015	179	20	Q1
2014	179	14	Q1
2013	179	12	Q1
2012	176	19	Q1
2011	164	23	Q1

# Report from Statistics in Biosciences (SIBS)

*Hongzhe Li and Mei-Cheng Wang*

Statistics in Biosciences (SIBS) is one of the two official journals established by ICSA. The journal is published three times 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. ICSA members can find more information from the following website: <https://www.springer.com/journal/12561>

SIBS publishes both regular articles and topic-oriented papers in Special Issues. In 2020 the journal has published two special issues: "Statistical methods HIV/AIDS Research" guest edited by Yingqing Chen at Fred Hutchinson Cancer Research Center, and "Statistical methods for cancer immunotherapy" guest edited by Bo Huang at Pfizer and Naitee Ting at Boehringer Ingelheim.

There are three special issues which are now in preparation for publications in 2021-2, as listed below. If you have interest in proposing new special issues for SIBS, please feel free to contact the editors-in-chief.

- "Statistics in microbiome and metagenomics" G.E.: Huilin Li at New York University.
- "Machine Learning Algorithms in Genomics and Genetics" G.E.: Yingying Wei at CUHK

- "Leveraging External Data to Improve Trial Efficiency" G.E.s.: Lanju Zhang at Abbvie and Naitee Ting at Boehringer Ingelheim.

Congratulations to Dr. Joan X. Hu, Professor of Statistics at Simon Fraser University, on joining the 3-year-term editors-in-chief for Statistics in Biosciences starting from January 1, 2021 with Dr. Hongzhe Li, Perelman Professor of Biostatistics at the University of Pennsylvania. Thank Dr. Mei-Cheng Wang, Professor of Biostatistics at Johns Hopkins University for her tremendous contribution and dedication to the journal. Look forward to the continuous success of the journal under the editorship of Dr. Li and Dr. Hu.

*Prof. Hongzhe Li/Hongzhe Lee  
Perelman Professor of Biostatistics,  
Epidemiology and Informatics  
Director, Center for Statistics in Big Data  
Vice Chair for Research Integration  
Department of Biostatistics, Epidemiology and Informatics  
University of Pennsylvania*



*Mei-Cheng Wang, Ph.D.  
Professor  
Department of Biostatistics  
Johns Hopkins Bloomberg School of Public Health*

# Report from the Program Committee

*Zhezhen Jin*

## ICSA Program Committee

- Zhezhen Jin (Chair, 2020, [zj7@cumc.columbia.edu](mailto:zj7@cumc.columbia.edu))
- Guoqing Diao (2018-2020, [gdiao@gmu.edu](mailto:gdiao@gmu.edu))
- Xiwu Lin (2018-2020, [xlin38@ITS, JNJ.com](mailto:xlin38@ITS, JNJ.com))
- Wenbin Lu (2018-2020, [wlu4@ncsu.edu](mailto:wlu4@ncsu.edu))
- LiuquanSun (2018-2020, [slq@amt.ac.cn](mailto:slq@amt.ac.cn))
- Kai Yu (2018-2020,

yuka@mail.nih.gov)

- Alan Y Chiang (2019-2021, achiang@celgene.com)
- Bin Nan (2019-2021, nanb@uci.edu)
- Ji Zhu (2019-2021, jizhu@umich.edu)
- Qingning Zhou (2020-2022, qzhou8@uncc.edu)
- Liang Zhu (2020-2022, Liang.Zhu@uth.tmc.edu)
- Hulin Wu (2020-2022, Hulin.Wu@uth.tmc.edu)
- Jie Chen (2020-2022, jiechen0713@gmail.com)

ICSA planned to have two major conference in 2020, one is the 2020 ICSA Applied Statistics symposium and the other is the 2020 ICSA China conference. The 2020 ICSA Applied Statistics Symposium was originally scheduled to be held from May 17 to 19, 2020, at Westin Galleria Houston, Houston, Texas. The 2020 ICSA China conference was scheduled to be held from June 26 to 29, 2020 at Zhongnan University of Economics and Law, Wuhan, China. Due to COVID-19 pandemic, the 2020 ICSA China conference was cancelled and the 2020 ICSA Applied Statistics Symposium was postponed to December 13-16, 2020 hosted online.

Despite the many challenges that COVID-19 has presented, the 2020 ICSA Applied Statistics Symposium will be held with strong virtual support at December 13-16, 2020. Dr. Hulin Wu was the chair of the executive committee, Dr. Momiao Xiong and Dr. Jianhua Huang served as co-chairs of Program Committee, Dr. Xi Luo chaired poster session committee, and Dr. Wenyi Wang was the chair of the short course committee. The theme of the symposium was “Advancing Statistics for Data Intelligence”. It offered 9 short courses and 104 sessions including three keynote lectures, seven poster sessions, one student award session, and a Talent Show. The keynote speakers were Dr. Xihong Lin (Harvard University), Dr. Josh Chen (Sanofi Pasteur), and Dr. Michael I. Jordan (University of California at Berkeley). More than 600 statisticians and data scientists from academic, government, and industry over the world will attend the symposium.

The COVID-19 continues to impact every aspect of our planned and planning activities. The program committee has reviewed and approved two proposals: one proposal from Dr. Xinyuan Song on

2022 ICSA International Statistics Conference and the other proposal from Dr. Samuel Wu on 2022 ICSA Applied Statistics Symposium.

Below is a list of planned upcoming events sponsored or co-sponsored by ICSA. As you can see, some of them have incomplete information. We will keep you updated as the COVID-19 situation changes.

**ICSA Sponsored Symposiums and Conferences**

- 2021 ICSA Applied Statistics Symposium: Chaired by Guoqing Diao at George Washington University, Washington D.C., dates to be determined.
- 2021 ICSA China Conference: Xi’an University of Finance and Economics, Xian, China, July 2-5, 2021 (Chaired by Professors Yingying Fan and Chunjie Wang) , July 2-5, 2021.
- 2022 ICSA Applied Statistics Symposium: Chaired by Professor Samuel Wu at University of Florida, Gainesville, FL, dates to be determined.
- 2022 ICSA China Conference: Southwest Jiaotong University, Chengdu, July1-4, 2022.
- 2022 12th ICSA International Statistics Conference: The Chinese University of Hong Kong, Professor Xinyuan Song, dates to be determined.

**Co-sponsored Meetings:**

- Postponed 2020 Duke Industry Statistics Symposium (April 21-23, 2021, Raleigh, NC)
- Postponed 2020 the 8th workshop on Biostatistics and Bioinformatics (Spring, 2021, Atlanta, GA)
- IMS Asia Pacific Rim Meeting (January 4-7, 2022, Melbourne, Australia)

If you have any comment or suggestion on ICSA programs, please contact Professor Zhezhen Jin (zj7@cumc.columbia.edu).



Zhezhen Jin, Ph.D.  
Professor  
Mailman School of Public Health  
Columbia University

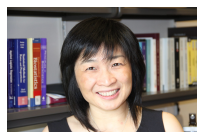
# ICSA Financial Report: January 1 through June 30, 2020

International Chinese Statistical Association  
Profit and Loss  
January 1, 2020 through June 30, 2020

<b>Beginning Cash Balance (Bank/Paypal accounts)</b>	<b>1/1/2020</b>	<b>\$</b>	<b>487,856.48</b>
<b>Income:</b>		<b>\$</b>	<b>244,400.00</b>
membership		\$	9,520.00
Springer		\$	2,500.00
Payment from Institute of Mathematical Statistics		\$	180.00
Job Posting		\$	450.00
Interest		\$	179.61
2018 Applied Symposium Registration/Profit		\$	90,000.00
2019 Applied Symposium Registration/Profit		\$	33,055.21
2019 Tianjin China Conference Registration/Profit		\$	103,515.18
2019 HangZhou ICSA International Conference Donation		\$	5,000.00
<b>Total Income</b>		<b>\$</b>	<b>244,400.00</b>
<b>Expense:</b>		<b>\$</b>	<b>(105,185.20)</b>
IT cost		\$	(7,956.46)
NISS Sponsorship		\$	(2,000.00)
2019 ICSA International Conference expenses - ICSA meeting/dinner		\$	(3,823.35)
2019 ICSA International Conference expenses - Qizhen		\$	(80,045.00)
2019 ICSA International Conference expenses - Speakers		\$	(7,500.00)
2019 ICSA International Conference expenses - Refund		\$	(610.00)
The Pao-Lu Hsu Award		\$	(3,000.00)
Paypal fee		\$	(250.39)
<b>Total Expense</b>		<b>\$</b>	<b>(105,185.20)</b>
<b>Net Total Income</b>		<b>\$</b>	<b>139,214.80</b>
<b>Ending Cash Balance (Bank/Paypal accounts)</b>	<b>6/30/2020</b>		<b>\$627,071.28</b>

**International Chinese Statistical Association  
Profit and Loss  
January 1, 2020 through June 30, 2020**

<b>ASSETS</b>	
Main Checking/Savings/PayPal	\$ 627,071.28
Vanguard Investment Balance	\$ 337,005.92
<b>TOTAL ASSETS</b>	<b>\$ 964,077.20</b>
<b>LIABILITIES &amp; EQUITY</b>	
Equity	
Main accounts opening balance January 1, 2020	\$ 487,856.48
January 1 to June 30, 2018 Net Income(+)/Expense(-)	\$ 139,214.80
2020 Symposium bank/Paypal account opening balance January 1, 2020	\$ 234,092.42
January 1 to June 30, 2020 Net Income(+)/Expense(-)	\$ (143,542.41)
Vanguard investment account opening balance on January 1, 2020	\$ 350,085.51
Investment profit(+)/loss(-)	\$ (13,079.59)
<b>Total Equity</b>	<b>\$ 1,054,627.21</b>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>\$ 1,054,627.21</b>



*Rochelle Fu, Ph.D.  
Treasurer (2019-2021), ICSA  
Professor  
OHSU-PSU School of Public Health*

## ICSA 2020 Student Paper Award Recipients

To encourage student members of ICSA to participate and share their research at the 2020 Applied Statistics Symposium, ICSA held a student paper award competition for outstanding student papers. The award committee consists of

- Dr. Ruosha Li, Co-chair, University of Texas Health Science Center at Houston
- Dr. Jing Ning, Co-chair, University of Texas MD Anderson Cancer Center
- Dr. Kehui Chen, University of Pittsburgh
- Dr. Yisheng Li, University of Texas MD Anderson Cancer Center
- Dr. Ruitao Lin, University of Texas MD Anderson Cancer Center
- Dr. Suyu Liu, University of Texas MD Anderson Cancer Center
- Dr. Yang Ni, Texas A&M University
- Dr. Haitao Pan, St. Jude Children’s Research Hospital
- Dr. Xinlei (sherry) Wang, Sothern Methodist University
- Dr. Qi Zheng, University of Louisville

The award winners were announced at the award ceremony during the annual ICSA General Member Meeting on 12/15/2020. Congratulations to the following 2020 ICSA Student Paper Award winners!

*ICSA Applied Statistics Symposium Student Paper Awards*

- Xinyue Qi, University of Texas Health Science Center at Houston
- Xinjun Wang, University of Pittsburgh
- Zhengjia Wang, Rice University



- Yizhen Xu, Johns Hopkins Bloomberg School of Public Health
- Huijuan Zhou, Renmin University of China and Texas A&M University

*Jiann-Ping Hsu Pharmaceutical and Regulatory Sciences Student Paper Award*

- Peng Jin, New York University Grossman School of Medicine

We heartily thank all of the participants for their contributions, and congratulate the winners for their great achievements. The abstracts of the winning papers are as follows.

*Authors:* Xinyue Qi, Christine Peterson, Yucai Wang and Shouhao Zhou

*Title:* Bayesian Meta-analysis of Censored Rare Events with Stochastic Coarsening

*Abstract:* Meta-analysis is a powerful tool for drug safety assessment by synthesizing findings from independent clinical trials. However, a common challenge is that a large number of published clinical studies may not report rare adverse events. If the number of events observed are fewer than a pre-specified cutoff, these events may not be reported in the publication. In addition, the missing data process could be stochastic, creating additional technical difficulty to assess whether the missing data mechanism can be ignored. To derive exact inference and robust estimates for the missing not at random data, we propose a Bayesian multilevel regression model in the coarsened data framework to accommodate censored rare event data. The proposed approach is illustrated using data from a recent meta-analysis of 125 clinical trials involving PD-1/PD-L1 inhibitors with respect to their toxicity profiles. We demonstrate that if the censored information is ignored, the incidence rate of adverse event is overestimated; this bias could have significant impact on immunotherapy drug adoption and public health policy.

*Authors:* Xinjun Wang, Zhe Sun, Yanfu Zhang, Zhongli Xu, Hongyi Xin, Heng Huang, Richard H. Duerr, Kong Chen, Ying Ding and Wei Chen

*Title:* BREM-SC: A Bayesian Random Effects Mixture Model for Joint Clustering Single Cell Multi-omics Data

*Abstract:* Droplet-based single cell transcriptome sequencing (scRNA-seq) technology, largely represented by the 10X Genomics Chromium system, is able to measure the gene expression from tens of

thousands of single cells simultaneously. More recently, coupled with the cutting-edge Cellular Indexing of Transcriptomes and Epitopes by Sequencing (CITE-seq), the droplet-based system has allowed for immunophenotyping of single cells based on cell surface expression of specific proteins together with simultaneous transcriptome profiling in the same cell. Despite the rapid advances in technologies, novel statistical methods and computational tools for analyzing multi-modal CITE-Seq data are lacking. In this study, we developed BREM-SC, a novel Bayesian Random Effects Mixture model that jointly clusters paired single cell transcriptomic and proteomic data. Through simulation studies and analysis of public and in-house real data sets, we successfully demonstrated the validity and advantages of this method in fully utilizing both types of data to accurately identify cell clusters. In addition, as a probabilistic model-based approach, BREM-SC is able to quantify the clustering uncertainty for each single cell. An R package for BREM-SC will be available, and a preliminary version is now available on GitHub. This new method will greatly facilitate researchers to jointly study transcriptome and surface proteins at the single cell level to make new biological discoveries, particularly in the area of immunology.

*Authors:* Zhengjia Wang, John Magnotti, Michael S. Beauchamp and Meng Li

*Title:* Functional Group Bridge Regression with Application to iEEG Data

*Abstract:* There is a surge of interest in functional data analysis to incorporate shape constraints into the regression functions tailored for specific applications with enhanced interpretability. One such example is sparse function that arises frequently in neuro-science where interpretable signals often are zero in most regions and non-zero in some local regions. In this paper, we consider the function-on-scalar setting and propose to model sparse regression coefficient functions using a group bridge approach to capture local sparsity. We use B-splines to transform sparsity of coefficient functions to its sparse vector counterpart of increasing dimension. We propose a non-convex optimization algorithm to solve the involved penalized least square error loss function, with theoretically guaranteed numerical convergence and scalable implementation. Some asymptotic properties are provided. In particular, the estimation of coefficient functions is rate optimal in the minimax sense under the L2 norm and resembles a phase transition phenomenon. We further derive a convergence rate

under the L1 norm and establish a sparsistency property, suggesting that the proposed method can be used for both function estimation and detection of sparse and non-sparse regions. An adjusted extended Bayesian information criterion is proposed for parameter tuning. We illustrate the developed method through simulation and an application to an intracranial electroencephalography (iEEG) dataset.

*Authors:* Yizhen Xu, Joseph W Hogan and Michael J Daniels

*Title:* Inference for BART with Multinomial Outcomes

*Abstract:* The multinomial probit Bayesian additive regression trees (MPBART) framework was proposed by Kindo et al. to approximate the latent utilities in the multinomial probit (MNP) model with BART. Compared to multinomial logistic models, MNP does not assume independent alternatives and naturally obtain a Bayesian estimation of the correlation structure among alternatives through the multivariate Gaussian distributed latent utilities. We introduce two algorithms for fitting the MPBART and show that the theoretical mixing rates of our proposals are at least as good as the existing algorithm proposed in Kindo et al. (KD). We also discuss the robustness of the methods to the choice of reference level, the imbalance in outcome frequencies, and the specifications of prior hyperparameters for the utility error term. Through simulations and application, we observe improvement in our proposals compared to KD in terms of MCMC convergence rate and posterior predictive accuracy.

*Authors:* Huijuan Zhou, Xianyang Zhang and Jun Chen

*Title:* Covariate Adaptive Family-wise Error Rate Control for Genome-Wide Association Studies

*Abstract:* Family-wise error rate (FWER) has been widely used in genome-wide association studies (GWAS). With the increasing availability of functional genomics data, it is possible to increase the GWAS detection power by leveraging these genomic functional annotations. Previous efforts to accommodate covariates in multiple testing focus on false discovery rate control while covariate-adaptive FWER-controlling procedures remain under-developed. Here we propose

a novel covariate-adaptive FWER-controlling procedure to incorporate external covariates that are potentially informative of either the statistical power or the prior null probability. An efficient algorithm is developed to implement the proposed method. We prove its asymptotic validity and obtain the rate of convergence through a perturbation-type argument. Our numerical studies show that the new procedure is more powerful than competing methods and maintains robustness across different settings. We applied the proposed approach to the UK Biobank data and performed GWAS on 27 traits with 9 million single-nucleotide polymorphisms (SNPs) tested for associations. Seventy-five genomic annotations were used as covariates. Averaged across traits, our approach attained a 13.7% increase in genome-wide significant SNPs detected compared to traditional Bonferroni correction.

*Authors:* Peng Jin, Anne Zeleniuch-Jacquotte and Mengling Liu

*Title:* Generalized Mean Residual Life Models for Case-Cohort and Nested Case-Control Studies

*Abstract:* Mean residual life (MRL) is defined as the remaining life expectancy of a subject who has survived to a certain time point and can be used as an alternative to hazard function for characterizing the distribution of a time-to-event variable. Inference and application of MRL models have primarily focused on full-cohort studies. In practice, case-cohort and nested case-control designs have been commonly used within large cohorts that have long follow-up and study rare diseases, particularly when studying costly molecular biomarkers. They enable prospective inference as the full-cohort design with significant cost-saving benefits. In this paper, we study the modeling and inference of a family of generalized MRL models under case-cohort and nested case-control designs. Built upon the idea of inverse selection probability, the weighted estimating equations are constructed to estimate the regression parameters and baseline MRL function. Asymptotic properties of the proposed estimators are established and finite-sample performance is evaluated by extensive numerical simulations. An application to the New York University Women's Health Study is presented to illustrate the proposed models and demonstrate a model diagnostic method to guide practical implementation.

# The Beginner's Guide to Getting Things Done

*Thanh Pham*

This article came from the blog post found at <https://www.asianefficiency.com/task-management/gtd-intro/>, written by Asian Efficiency leadership team. Dr. Yi Huang did minor edits to transfer it into article format for reprint in ICSA Bulletin, with the publication permission from **Asian Efficiency**. Two important resources for introducing Getting Things Done are:

- Getting Things Done: The Art of Stress-Free Productivity, by David Allen, 2001, 2015.
- David Allen's TED Talk —22 minutes video, <https://www.youtube.com/watch?v=CHxhjDPKfbY>

Getting Things Done (GTD) is one of the most popular productivity systems out there today, and with good reason. GTD comes from David Allen's book - Getting Things Done: The Art of Stress-Free Productivity (2001, 2015). It's an effective system for clearing your mind of all inputs so you can focus on the things that are truly important, which in turn allows you to do your best work and get things done.

Asian Efficiency has helped over 13,000 people with their productivity, and many of those have implemented their own GTD system. In fact, one of the biggest searches that brings people to the site is "GTD meaning", which tells me people want to improve their productivity, and they've heard of this thing called GTD, but aren't sure how to start. This article will solve that.

If you constantly feel overwhelmed, GTD's central concept of capturing everything into a trusted system has the potential to revolutionize your life—it certainly did mine. Implementing GTD can restore peace and tranquility as everything gets filed orderly into your trusted system instead of the disorder and chaos that comes from just responding to emergencies and putting out fires. In this post, we'll show you how to reclaim control of your life and accelerate the GTD learning curve for you by covering the basics of GTD and walk you through a couple of examples so you can see how to apply it to your life.

You may have heard of the Getting Things Done system before, but perhaps you aren't sure how to implement it. On the surface, GTD can be a bit

intimidating when trying to get started with it. If you've been putting off learning about GTD because you didn't want to take the time to read the Getting Things Done book, this post will show you exactly how to get things done.

## Part 1, GTD Overview

The GTD system is built around the concept that you have a lot of different "inputs." These are things that enter your consciousness and you must decide what to do with them. They could be a phone number you need to remember, meetings you have to attend, or errands you need to run. The problem is that most people don't do anything with these thoughts when they have them, and they just put them off.

Here's an example: you read an email that requires some action, but you just leave it in your inbox and hope you'll remember to do something with it later. Have you ever done that before? (Almost certainly yes —everyone has!)

By failing to put things where they belong (on a calendar, to-do list, etc.), you can quickly become stressed by trying to remember everything and continually worrying about what you've forgotten. This leads to what David Allen calls "Emergency Scan Modality," which is basically a continual state of scanning the horizon looking for the next fire to put out. Needless to say, this is no way to be productive.

## Mind Like Water

Ideally, you want to capture everything you have to do or reference into a trusted system so you can deal with it later on your terms.

The first time I read Getting Things Done in 2005 (which I talked about in my article about the Getting Things Done app I use, and 5 other favorites), I was struck by the simile he references about "mind like water". According to Allen, your brain is for having ideas, not storing them. When you have a system you can trust to keep everything in it alleviates the burden of trying to remember everything. You may be shocked by how many more "good ideas" you have because your brain can finally rest and function the way it was designed. David Allen calls this

efficient, natural state “mind like water” .

This is one of my favorite Getting Things Done quotes from the book, which has stayed with me ever since: “That’s the critical first step in getting to the state of “mind like water.” Just gathering a few more things than you currently have will probably create a positive feeling for you. But if you can hang in there and really do the whole collection process, 100 percent, it will change your experience dramatically and give you an important new reference point for being on top of your work.” This is exactly how I felt after the first time I truly did the work to implement GTD.

“Mind like water” refers to a natural state of being ready for anything and responding appropriately. For example, when you throw a pebble (or rock) into still water, the ripples will radiate outward from the point where the rock enters the water and the water always responds appropriately to size and the force of the impact. However, when we’re stressed and overwhelmed, we tend to overemphasize the things that aren’t important and let slide the things that really are important. In other words, we don’t respond appropriately.

## The Multi-Tasking Myth

Our brains are not wired for multi-tasking. According to an article in INC., trying to do two cognitive things at the same time, simply can’t be done—the mind doesn’t work that way. When someone attempts to hold their projects, tasks, and meetings in their mind, it puts their brain in an unsustainable multi-tasking mode. David Allen refers to all of these commitments as open loops. By definition an open loop is an unfinished commitment, and when it is tracked in your psyche, instead of your system, it will require energy and attention to track and maintain. This type of mental multi-tasking has a direct negative impact on your productivity.

The whole goal of the GTD system is to help you achieve “mind like water” so you can respond appropriately to all the different inputs in your life and avoid situations like this. In order to do this, GTD has a simple 5 step process.

## Part 2, Five Simple Steps to Get Things Done

1. Capture
2. Clarify
3. Organize

4. Reflect
5. Engage

### 1: Capture —Collect what has your attention.

Have you ever had a great idea but were too busy to write it down and then completely forgot about it later? That’s because (like we said earlier) your brain is for having ideas, not storing them. The central tenet of GTD is to capture everything and put it into a trusted system so that you can make appropriate decisions about what to do when.

David Allen says you can’t feel good about what you’re not doing unless you know what you’re not doing. If you don’t capture the things that have your attention you can very easily get stuck in “emergency scan modality” by default. Many people live their lives constantly reacting, trying to put out the fires that continually spring up because they’ve forgotten about things they needed to do (or they’re at least worried about what they may forgotten so they can’t focus on any one thing for very long). The first step to get things done is to capture everything that has your attention and place it into an inbox until you can process it.

#### *An Inbox for Everything*

Chances are you’ll have several inboxes like this in your life. It is important to identify all of them, so you can routinely process them and make sure nothing falls through the cracks. For example, you may have a paper tray, your email inbox, and you may capture random thoughts into a notes app like Notepad, Drafts, Evernote, or Apple Notes. If you’ve never taken the time to identify the inboxes that exist in your life, do this now!

Any time you have to think “where does this go?” while capturing, you’re introducing an opportunity for friction.

If you use a task manager as your GTD app, the inbox of your task manager can be a great candidate for productive capture.

### 2: Clarify —Process what it means.

Once you have everything collected in your inbox (or inboxes), then you can begin to process everything and make decisions about what to do with all those inputs. GTD follows a simple workflow to guide you in the decision-making process. The GTD decision tree illustrates how to organize every input into its proper place in your trusted system. We’ll break down the GTD decision tree in a little

bit and show you the exact process for identifying everything and putting things in the appropriate containers so you always know exactly where everything is when you need it.

#### *Your Inbox Under Control*

Clarity is one of the critical components of a trusted system, and it is how you turn off the mental multi-tasking that slows down your productivity. One important way to do that is to regularly clean your inboxes. If you do not process your inboxes on a regular basis, you will develop a backlog. It can be demotivating to face an email inbox with hundreds of messages as opposed to an inbox with 50 messages that need to be processed. It creates friction in the system even though you know there are some emails with important information. The bigger the task, the higher the tendency to procrastinate. By processing your inboxes regularly, you can avoid having a huge backlog like this and eliminate the friction in your system.

We're not going to get into the nuts and bolts of processing your inboxes in this post, but if you're interested in that you'll benefit from our Inbox Detox resource. It will help you get to an empty inbox in one afternoon.

### **3: Organize —Put it where it belongs.**

Once you identify what something is, you have to put it in the appropriate container. For example, if it's something actionable, put it in your task management system. We like OmniFocus on the Mac, but Todoist is a great cross-platform tool, and Trello, Asana, or heck even Outlook can easily be used for GTD.

If it's not actionable but it is reference material you might need later, put it somewhere you can easily recall it. If it's time-sensitive, like a meeting or an appointment, put it on your calendar. If it's not important, you may decide just to trash it and not worry about it anymore.

#### *Understanding Contexts*

This is also where the idea of contexts comes into play. A context is basically just a tool, thing, place, or person you need to get something done. For example, a list of phone calls you have to make would be grouped under the "phone" context, or a list of grocery items under the "grocery store" context. If it's something you need to discuss with someone on your team, you might have a context for that person or an "office" context for tasks that can only be completed when you get to the office. If you really want to get fancy, you could even have contexts based on energy levels. You could have a low-energy context

with "easy wins", of a high-energy context for when you're really motivated to be productive.

One warning: as we said in our podcast about common GTD mistakes, we often see people going too wild with their contexts. In our opinion, they're an area of Getting Things Done that have not aged well. Our suggestion: create context ONLY that help you decide what to do in any given moment. Don't create contexts for contexts' sake.

### **4: Reflect —Review frequently.**

This is the #1 mistake we see people make, and it's the biggest reason why GTD doesn't work for people —they don't do the GTD review frequently enough.

By failing to review consistently, they just let things pile up and it gets harder and harder to keep up with their system. They can get the system set up, but then they try to "set it and forget it." They don't maintain it. When it comes to your productivity, you need to be consistently reviewing and making adjustments in order to **get things done**. It's important to clean up and update your lists, dump any new loose ends into your trusted system, and clear your mind so everything can run smoothly. At Asian Efficiency, we recommend that you do this weekly. Yes, it takes a little bit of time, but the benefit of feeling like you're finally in control of your life by far outweighs the cost.

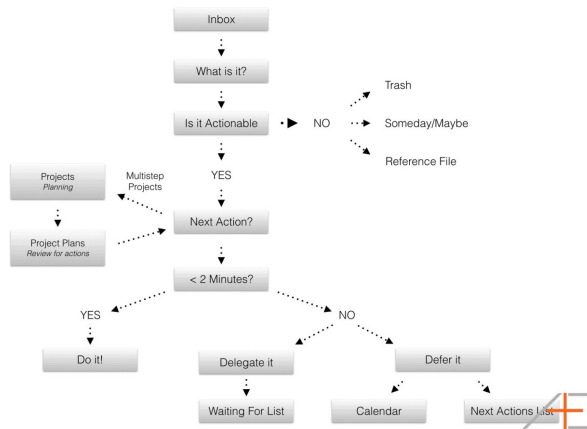
A podcast where we take you through the GTD Weekly Review is available here: <https://www.asianefficiency.com/podcasts/311-weekly-review/>

Many people follow a simple review process each day to plan their work. This can be done at the end of the day to prepare for the following day or as a part of a morning ritual. Planning your work day in advance allows you to focus on the work that is most important and helps you overcome procrastination and inevitable distractions.

### **5: Engage —Simply do.**

Now you are ready to get things done. When you consistently follow the first four steps, you will have a sense of clarity and control over your day. You can be confident that you are investing your time, energy, and attention on the right next actions. You will be free to work with the assurance that nothing is forgotten because it has been captured and processed into a trusted system.

*The GTD Decision Tree*



Let’s take a look at how to actually apply this by working through the GTD Decision Tree. If this diagram looks a little bit confusing, don’t be intimidated. Here’s the basic idea:

Throughout your day, you’re constantly bombarded with information, such as things you have to do, errands you have to run, names and phone numbers, etc.

All of these things are constantly vying for your attention in your “inbox”. When information like this comes at you, the first question you have to ask yourself is “what is this piece of information?”. Once you decide what it is, you can then answer the question “is it actionable?”.

**Inputs That Are Not Actionable**

If it’s not actionable, it can go one of 3 places — trash, someday/maybe, or reference file.

First, it could go in the trash. A surprisingly high amount of information we try to hang on to actually belongs here. Many people have a tendency to be digital hoarders, but the reality is that you don’t need all the stuff you say you need. Don’t be afraid to delete things that you don’t think are important. If you decide it actually is important, you could put it either in a someday/maybe folder (if it will be important to review at a later date), or in a reference file so you can access the information easily when you actually need it.

**Inputs That Are Actionable**

**Next Action or Project** —If the information is actionable, you need to ask yourself “what’s the next action?”. If you can’t complete the activity in one step, then it’s actually not an action, it’s a project and needs further planning. A project is anything that contains multiple steps in order to complete it. Chances are you’ll have several projects active at the same time, so in addition to the initial planning phase of the project, it’s also very important that you regularly review the project to see if there are any additional steps that are required to com-

plete it.

**The 2-Minute Rule** —If the information is not a project and you can actually finish it in 1 step, the next question you need to ask is “will this take less than two minutes?” If it will take less than two minutes to complete the activity, just go ahead and finish it—it will probably take more time and effort to decide on a follow-up plan than it will to actually just complete the activity.

How many times have you experienced this? You realize there’s something you need to do, so you (hopefully) capture it to your trusted system. Then you keep pushing it off, and off, and off.

Finally you get around to doing it and… it takes you 2 minutes. Argh! If you had just done it right away, it wouldn’t have been causing you stress and guilt!

Often I’m in a hurry to get things done, so I can be a little heavy on the “capture” button instead of the “do right away” button. Don’t make that mistake: the 2-Minute rule is the secret sauce to a healthy email inbox and task management system.

**Delegate or Defer** —If it will take more than two minutes to complete, you can do one of two things with it —delegate or defer it.

First, you can delegate it to someone else, in which case you need to make sure that it ends up on a waiting list for you to follow up with. Make sure that you don’t just hand it off and forget about it, especially if you are the one ultimately responsible for the completion of the activity. It is important to follow-up and confirm that the task gets finished.

Of course, delegation is often easier said than done. Here is our podcast with 3 Simple Steps To Delegating Work The Right Way So You Don’t Have to Worry About It (<https://www.asianefficiency.com/podcasts/182-delegating/>)

Second, you can defer it. When you defer a task, you’re pushing it out into the future for one of two reasons: either you need to complete the task at a specific time, or you need something else to be finished before you can get to that task. If you’re deferring the task because it is time-based (like a meeting), place it on your calendar. If it’s not time-based and you’re waiting for something else to be finished before you can get to this task, it goes on your “next actions” list. A Getting Things Done app (<https://www.asianefficiency.com/technology/best-gtd-apps/>) is great for this, as you can often have sequential projects where tasks are marked as unavailable until the previous task is completed.

**Real-Life Examples** walk through a couple of practical examples of how you might

implement GTD on a day-to-day basis, available at <https://www.asianefficiency.com/task-management/gtd-intro/>

## Part 3, The Best Apps and Tools for GTD Users

The secret to making GTD (or any task management methodology) work is to make sure that you can trust your system. One aspect of that is knowing what applications you're going to use and what role they are going to fill. At a minimum, you will want to nail down:

1. An app for capture
2. An app to track projects
3. An app to track next actions
4. An app for reference material
5. A calendar

Fortunately, one app can handle multiple functions of these. For example, Thanh uses OmniFocus for capture, project, and next actions. Some people might use something like Notion for everything. The list of our favorite GTD apps are available at <https://www.asianefficiency.com/technology/best-gtd-apps/>, along with some community recommendations.

### General GTD Tips

1. ***Have a solution for your paper clutter.*** Even if you're a tech geek, you still occasionally have paper to deal with. The easy way to deal with this is just to scan it into a paperless filing system.
2. ***Find the system that works for you.*** Feel free to modify the GTD workflow so that it fits your specific needs. Use the GTD workflow (which you can download for free below) as guidelines to shape your own unique system that fits your lifestyle. Don't worry about "sticking to the rules" and focus more on making the system work for you.
3. ***Don't spend too much time fiddling with your system.*** The best system is one that runs with the least amount of friction. It's easy (especially if you utilize an application like OmniFocus) to spend more time tweaking your

system than actually working. What is most important is to get things done. If you want to get up and running as quickly as possible, you'll definitely want to check out two great resources —The OmniFocus Field Guide by David Sparks and the extremely well-done website Learning OmniFocus by Tim Stringer.

4. ***Be realistic about what you can get done.*** Don't put fifteen things on your to-do list for the day. You're just setting yourself up for disappointment when you don't finish them all. Instead, pick your three most important tasks and focus on those. If you make it through those three tasks, then pick three more. This way, you build momentum and you'll actually look forward to attacking your to-do list because it's attainable instead of dreading it because it's impossible.
5. ***Practice time boxing to get more done.*** The most popular application of this is the Pomodoro Method, which we write about in detail here (<https://www.asianefficiency.com/motivation/pomodoro-technique-ultimate-guide/>). The basic idea is that you set a timer for 25 minutes and just attack your work, then take a five-minute break. Try it, you'll be amazed how much you can get done in 25 minutes if you put your mind to it!
6. ***Do not take for granted the review process.*** Not doing it once will eventually lead to not doing it at all. If you do not reflect, you will end up failing and you will not be able to reap the full benefits of the GTD system.

## Part 4, Strategies to Overcome Mental Blocks That Helped Me Stay Productive

The original blog post is available at <https://www.asianefficiency.com/productivity/overcome-mental-blocks/#>

You've heard about writer's block and maybe you have heard about creativity block. These are terms that are often thrown around when someone is unable to continue to work. Whether you are writing or creating something, even if you're not an artist, you will experience mental blocks too that prevent you from finishing what you started.

Think about a time when you thought that you had all the materials needed and you had everything you needed right in front of you (including

time, energy, and attention). Despite having everything, you could not make yourself start or finish. That's a mental block.

Mental blocks stop you from being productive. It can happen once in a blue moon or it can happen daily. This will lead to you failing and feeling desperate because you are stuck. Mental blocks can be very draining especially when you don't know what is happening to you and you don't know how to get out of it. When people talk about productivity it's often focused on systems, tools, workflows, apps, habits. Not a lot of attention is paid to mental factors such as mental blocks.

## What Is A Mental Block?

What is a mental block? The simplest definition out there is "an inability to recall some specific thing or perform some mental action" .

In truth, there are at least seven (common) types of mental blocks:

### 1. Self-doubt

This is often linked to a lack of self-confidence but it's more than just confidence or the lack thereof. This happens even to the most skilled person feeling that they are unqualified. Your boss or mentor can tell you that you are the best in your field but your mind will find arguments that will make you think that it's not true.

### 2. Indecision

You put in too much value in each decision you have to make. You over-research and you can't trust yourself to identify what is important. You end up not being able to focus.

### 3. Fixed mindset

You're stuck in the past and it stops you from growing. For example, a year ago you applied for a promotion but didn't get it and because of that, you no longer wish to be promoted because you're stuck thinking that you will not get it.

### 4. Comparison

The success of the people around you is a threat to you. You think that because they became successful first, you can not be successful anymore. You feel threatened by them so that you end up focusing on other people instead of yourself.

### 5. Uncertainty

Don't confuse this with indecision. In uncertainty, you already made a decision but you are unable to execute it.

### 6. No limits

Saying yes to everything including ideas or projects that you want for yourself. You have too

much stuff going on at the same time that you are unable to finish anything.

### 7. Tunnel vision

You don't consider alternatives and you are stuck with how you do things. You don't go beyond what you know and thus you lose objectivity.

These are the seven types of mental blocks. Did any of the above resonate with you? You can have one, two, or all. If you are confused but you know you have it, there's an easy way to find out which mental block or blocks you may have.

You need to listen to yourself and observe what you do and do not do. For example, when you start to slack off or mindlessly staring into space, listen to your internal monologue. What are you telling yourself? Based on what you are communicating with yourself, you will soon find out what mental blocks you have. If it helps to write them down.

Now that you know what your mental blocks are, it's time to overcome them.

## How to Overcome Mental Blocks

We have 4 strategies that you can use right now to overcome mental blocks.

### 1. Uncover the causes of the mental block

"Why do I think this way?" is a question you can ask yourself. Asking yourself why once might not be enough so ask yourself why until you uncover the cause. You might uncover that the causes happened when you were still a child, it's not impossible.

### 2. Remove the blocks

Now that you are aware of what your mental blocks are and why you have it, you can work on removing these blocks. One way you can do this is to listen to your internal monologue. When you start telling yourself that you can't do it (self-doubt), tell yourself "that's not true" . When you start creating scenarios in your head, tell yourself "it's going to be okay" . These internal monologues can help you remove mental blocks from taking the best out of you.

### 3. Reduce the power of the mental blocks

Most mental blocks come from fear. What you can do when this fear starts to swell is to think about what the outcome would be. Going back to the self-doubt example, let's say you don't want to speak up during the meeting because you are afraid that your boss will not listen to your idea. So? What's the worst that could happen if your boss will not listen to your idea? Will you get fired? No, you won't. By doing that, you reduce the power of the mental block because now you are faced with the reality



that the fears you are envisioning are not going to happen.

#### 4. Transform the mental blocks

You can convert or transform a mental block so that it works for you. You can transform the negative energy into a positive one. I go through the self-doubt mental block and I transformed this into making myself review my work better. I don't let it hold me back anymore.

#### Next Steps

It's time to listen to yourself and find out what

your mental blocks are. Once you know what your mental blocks are, go through at least one of the strategies mentioned above.



*Thanh Pham*

*CEO and founder*

*Asian Efficiency*

[info@asianefficiency.com](mailto:info@asianefficiency.com)

<http://www.asianefficiency.com/>

## China Big Data Collaboration to Improve Patient Care

*Zhi Xia Xie, Jim Z. Li, Yvonne Huang, Olive Jin, Wei Yu and Kelly H. Zou*

### Big Data and Real-World Evidence in China

For medical researchers serving in industry, government, and academia around the world, real-world data (RWD), big data, and digital capabilities and technologies must be enabled and elevated globally, especially when randomized controlled trials (RCT) become increasingly costly. There are tremendous opportunities around the world to gain medical insights through real world evidence (RWE) and big data outside RCTs.

For example, in developing countries in Asia including China, as well as Latin America, Africa and the Middle East, there is a large population who can benefit from medical breakthroughs that can change patients' lives. The expansion of the middle class, the desire for quality medicines and services, and the rise of non-communicable diseases (NCD), commonly known as chronic diseases, are the realities that these regions must face every day. [1] Their increasing needs for quality medicines and services necessitate researchers to conduct more researches and generate more evidence, leading to solutions in their populations to help them access optimal and effective medicines and services. [2] Furthermore, the advances in information technologies and telecommunication infrastructures also drastically enable a massive amount of RWD generated from many sources outside the RCT framework.

Besides medical research, RWD also plays an increasingly important role in patient care. For example, tele-medicine and internet hospital are important, as is timely development via cutting-edge innovation, especially during the COVID-19 pandemic and afterwards. [3] Hospitals participate in an e-Health network. Digital innovation can be an efficient way to improve the capability of physicians, helping to guide patients to receive individualized NCD management. Data are also useful for evidence-generation to monitor healthcare quality and to evaluate the effectiveness of various interventions. Thus, countries with rapid economic growth and well-developed information technology infrastructures are ripe for opportunities, and China has put big data for medical research onto roadmaps as a high priority. [4]

Emphasizing the use of RWD in medicine is a national priority globally and in China. A recent article wrote about China: "In June 2016, the State Council of China issued an official notice on the development and use of big data in the health-care sector. The council acknowledged that big data in health and medicine were a strategic national resource and their development could improve healthcare in China, and it set out programmatic development goals, key tasks, and an organizational framework." [4] Thus, collaborations and partnerships based on big data have been formed in various geographical regions, provinces, cities, and districts.

Real-world data sources can range from electronic health records (EHR), insurance claims, disease registries, surveys, medical devices, digital

apps, and beyond. To fully realize RWD's potential value and allow better collaboration, data from various sources need to be pooled and linked into big data. However, there are also unique challenges there, including data integration and access, interoperability, standardization, quality control, and privacy protection are important issues. All these necessitate national and international guidance and standards to coordinate and manage. In China, for example, the National Medical Products Administration (MNP) published a guidance document on "Real-World Evidence that Defines Real -World Data (RWD) and Real-World Evidence (RWE) Terms and Clarifies Their Use During Drugs' Research and Development and Registration in China." [5] The US Food and Drug Administration has issued RWE guidance documents. [6]

## Digital Innovation During and Post-Pandemic

The health care innovation is advancing much faster due to the urgency of the COVID-19 pandemic, where breakthroughs are urgently needed via integrated care across a range of health care professionals. [7] Government policies and healthcare accessibility and quality must all adapt to the rapidly arriving real-world data. Such data, along with data from randomized controlled trials, may help develop new therapies and evaluate the outcomes of new interventions.

A major barrier is the access of real-world data due to the many diverse sources and repositories of data. An additional challenge is to use RWD in support of precision-medicine solutions tailored towards the specific vulnerable patient populations such as the elderly and patients with pre-existing comorbid NCDs, since both advanced age and comorbid conditions drastically increase the severity and mortality of COVID-19.

Data translators, who are like shepherds with subject-matter expert knowledge, as well as data scientists, are needed. [8] For example, how to put a complex set of data together, efficiently and accurately, within and across complex health care information systems, to improve diagnoses, treatment and follow-up is both challenging and impactful. Chinese characters may make variables and formats in databases harder to standardize, as well as natural language processing. These countries tend to have increased data and privacy protections, with diverse data formats sitting in patient registries without being standardized and con-

nected. [9]

Data-driven and data-savvy researchers can and must make a meaningful and impactful contribution to combat deadly diseases during the COVID-19 pandemic. Skillful data-related capabilities are critical in gaining evidence and insights from big data. Furthermore, for digital and technological innovations that can target therapies and optimal treatment strategies, it is imperative to foster multi-disciplinary collaborations and partnerships. [10]

### Disclaimer

The authors are employees of Upjohn Division, Pfizer Inc. The views expressed are the authors' own and do not necessarily represent those of the employer.

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*Zhi Xia Xie*  
Research, Development & Medical  
Upjohn Division  
Pfizer Inc



*Jim Z. Li*  
Research, Development & Medical  
Upjohn Division  
Pfizer Inc



*Yvonne Huang*  
Research, Development & Medical  
Upjohn Division  
Pfizer Inc



*Olive Jin*  
Research, Development & Medical  
Upjohn Division  
Pfizer Inc



*Wei Yu*  
Research, Development & Medical  
Upjohn Division  
Pfizer Inc



*Kelly H. Zou*  
Research, Development & Medical  
Upjohn Division  
Pfizer Inc

# 1993: Halcion (Triazolam) and FDA Advisory Committee Meeting on Neuro-pharmacological Drug Products

Yi Tsong

*\*This article has been reviewed by FDA and determined not to be consistent with the Agency's views or policies. It reflects only the views and opinions of the author.\**

Many historical events happened in 1993, many of which led to a series of related events that have happened in more recent years.

First, the British House of Commons approved the European unity pact (May 20). The Maastricht Treaty took effect, creating the European Union on Nov. 1. Little did we know that the pact would be broken later in 2018.

Second, after many years of conflict, the Israeli-Palestinian accord was reached on Aug. 28. As history showed later, it was only a temporary lull.

Third, China broke the nuclear test moratorium on Oct. 5. A PTBT (Partial Test Ban Treaty) was drafted by Soviet Union, United States and United Kingdom under the recommendation of the United Nations. It was signed by 126 parties (not every party represents a UN country) in 1963 with Taiwan instead of PR China representing China. In 1991, a moratorium (temporary stop and suspend any activity on nuclear weapons testing) was signed by the Soviet Union and USA.

Fourth, Federal agents besieged the Texas Branch Davidian religious cult compound after six were killed in a raid on March 1. Fire killed 72 as the cult standoff in Texas ended with a federal assault on April 19. The 51day siege was called the Waco Siege. US agents were originally blamed in the Waco, Tex., siege. But all cases against the Texas State government were dismissed on Oct. 1.

Fifth, five arrested, sixth sought in bombing of World Trade Center in New York on March 29.

Sixth, Ruth Bader Ginsburg was appointed to Supreme Court by president Clinton on June 14. She has played many crucial roles in the Supreme Court up to current times.

Seventh, the House of Representatives approved the North American Free Trade Agreement (NAFTA)(Nov. 17); Senate follows (Nov. 21).

Eighth, Clinton signed the Brady Bill regulating firearms purchases (Nov. 30).

Ninth, after the three-peat of the Bulls as NBA

Champions, Michael Jordan announced his first retirement from the NBA. A few years later, Jordan rejoined the Bulls and the Bulls had another three-peat.

Tenth, Song of the Year: "Tears in Heaven" by Eric Clapton won the Grammy; "Dream lover" by Mariah Carey; "Fields of Gold" by Sting, "Another sad love song" by Toni Braxton; "Please forgive me" by Brian Adams; "The river of dreams" by Billy Joel; and "Hero" by Mariah Carey also won Grammy awards.

Eleventh, actress Audrey Hepburn died on Jan. 20, 1993. Hollywood has not developed anyone as elegant and noble since then.

Twelveth, the best movies in 1993 —The nightmare before Christmas; Jurassic Park; Ground Hog Day; Schindler's list; In the name of the father; Philadelphia; The Piano; In the age of Innocence; Sleepless in Seattle; Farewell my Concubine; The wedding Banquet; Mrs. Doubtfire; The Firm.

One of the most widely ridiculed and memorable gaffes in the history of the United States Presidency occurred in Japan on the evening of January 8, 1992, when President George H.W. Bush vomited on the Prime Minister of Japan, Kiichi Miyazawa. Bush felt ill and leaned forward and fell to his side and vomiting into the lap of his host. <https://www.history.com/this-day-in-history/george-bush-vomits-on-prime-minister-of-japan>.

It was reported that President Bush took a tablet of Halcion (Triazolam) to sleep in Air Force One on the way from Washington DC to Tokyo. The famous American writer, lawyer, actor, comedian and commentator Benjamin J. Stein wrote an article called "Our man in Nirvana" on January 22 in the New York Time about using Halcion (Triazolam) in the White House. Since it is not the main content of my article, I present his article after my report on the last page. <https://www.nytimes.com/1992/01/22/opinion/our-man-in-nirvana.html>.

One of the most important biopharmaceutical events in this year, was the advisory committee meeting for Halcion (Triazolam). Triazolam is one of the benzodiazepine products which was a sched-

ule IV product. Benzodiazepine products were prescribed to treat mental, mood, anxiety, aggression, suicidal behavior, schizophrenia, and psychosis. Some of them were also used to treat insomnia. Triazolam was great as a sleeping pill because it had a short half-life and acted fast. However, it had all the side effects of benzodiazepine products, such as withdrawal, illusion, suicidal attempt, ...FDA approved Upjohn's application for its marketing in 1982. By 1991, United Kingdom and most European authorities had decided to pull the drug off the market because of the large number of benzodiazepine adverse reactions reported. FDA issued warning letters and recommended reduction of the dosage because of the observation of the same phenomenon; there were many lawsuits in the United States. The UK decision prompted Public Citizen's Health Research Group and other organizations to call for a U.S. ban on Halcion (Triazolam). FDA organized a safety and efficacy review and planned an Advisory Committee Meeting in May, 1992.

The safety was brought up in an earlier Advisory Committee meeting using reports of the Adverse Drug Event Reporting (ADER) system in 1987. I was responsible to provide a comparison of postmarketing adverse reaction reports of triazolam with a properly chosen drug by the FDA medical reviewer for this 1992 Advisory Committee meeting. For comparison purposes, we chose another schedule 4 benzodiazepine drug Restroil (sold under generic name Temazepam) as a reference. Temazepam was patented in 1962 and approved and marketed as a sleeping pill in 1981. The ADER system does not have the information of drug users. The original analysis was a simple display of number of reports per drug. The sponsor argued that Halcion (Triazolam) had been more prescribed than Temazepam since 1985 and the large number of reports of adverse drug event in the current year were due to the publicity of the 1987 Advisory Committee meeting. For a proper comparison, we adjusted the number of reports by the number of prescriptions. There were two issues to discuss. First, was there was a reporting increase after the 1987 Advisory Committee meeting? Second, was the reporting rate adjusted for prescription of Triazolam higher than Temazepam?

In the Advisory Committee, we presented the safety issues of Halcion (Triazolam) safety on nine different psychological/neurological adverse events: Agitation, Amnesia, Psychosis, Confusion, Hostility, Seizure, Fatality, Depression and Psychological depression, in comparison to Temazepam usage. For presentation in this report, I will just

present the case of Amnesia reporting.

First, we have the number of reports and prescriptions in each of the years Temazepam and Triazolam had been marketed in U.S. in Table 1.

Calendar year	Triazolam		Temazepam	
	Number of reports	Rxs <sup>a</sup>	Number of reports	Rxs
1981	0	0	1	872
1982	0	0	1	3229
1983	37	1971	1	4537
1984	59	4617	0	5046
1985	32	6870	0	5438
1986	16	9017	0	5498
1987	30	10,458	0	5424
1988	93	11,021	1	5283
1989	27	8744	2	5383
1990	59	7450	2	5451
1991	3	6399	0	5259
Pool	356	66,547	8	5142

From the 1992 CDER Memorandum for Advisory Committee on Neuropharmaceutical Drug Products.

<sup>a</sup>Rxs: in 1000 prescriptions.

**Table 1** ADE reports of amnesia and number of prescriptions (Temazepam and Triazolam by calendar year)

In order to address the first question, I used the method that I proposed for the assessment of increased frequency of reports of adverse drug reaction as I reported in the entry of 1991 of "My life in FDA". First, let me reintroduce the notation needed here.

Let

- $X_r, X_c$  = the random variables representing the number of ADRs reported in the reporting interval and comparison interval, respectively;
- $x_r, x_c$  = the observed number of ADRs reported in the reporting interval and comparison interval, respectively;
- $x_t$  = total number of ADRs reported in the reporting interval and comparison interval combined;
- $s_r, s_c$  = the estimate of sales volume (assumed to be known) in the reporting interval and comparison interval, respectively;
- $s_t$  = estimate of total volume (assumed to be known) sold in the reporting interval and comparison interval combined;
- $R$  = ratio of sales,  $s_r/s_c$  ;
- $PR$  = proportion of estimate of sales volume in reporting interval,  $s_r/s_c$  ;

- $D_r, D_c =$  the expected reporting rates in the reporting interval and comparison interval, respectively, i.e.  $D_r = E(\frac{x_r}{s_r}), D_c = E(\frac{x_c}{s_c})$

The notation is represented in the two-by-two table below

	Time interval		
	Reporting	Comparison	Total
ADRs	$x_r$	$x_c$	$x_t$
Sales	$s_r$	$s_c$	$s_t$

**Table 2** Notation of ADRs and Sales of Triazolam

Assume  $X_r$  and  $X_c$  follow a binomial distribution with expected values  $E_r$  and  $E_c$ , respectively. We need to test the following null hypothesis:

$$H_0 : E_r = RE_c \text{ v.s. } H_0 : E_r > RE_c$$

Under the null hypothesis,  $X_r \sim Bin(x_t, P_r)$ , the 90% confidence interval of  $E_r$  is

$$(Rx_c - Z_{0.95}\sqrt{(x_c + x_r)R}, Rx_c + Z_{0.95}\sqrt{(x_c + x_r)R})$$

Let  $C = Rx_c + Z_{0.95}\sqrt{(x_c + x_r)R}$ , a significant increase of Amnesia adverse reporting is concluded if  $x_r > C$ .

From Table 3, we have  $R = 33,614/32,933 = 1.021$  and  $C = 1.021 * 174 + \sqrt{356 * 1.021} = 209$ . Since  $x_r = 182 < 209$ , we conclude that there is no evidence that the 1987 FDA Advisory Committee Meeting and the publicity caused the increase of Amnesia ADE reporting of Halcion. The method applied to all other eight adverse events produced the same conclusion that there is no increase of ADE reports after the publicity of the Advisory Committee Meeting in 1987 in the ADEs.

	Time interval	
	Post	Prior
AE reported	182	174
Rx usage estimates	33,614	32,933
Reporting rates	182/33,614	174/32,933
	= 541.4/100,000	= 528.3/100,000

From the 1992 CDER Memorandum for Advisory Committee on Neuropharmaceutical Drug Products.

**Table 3** Publicity effect on ADE report of amnesia for triazolam prior to publicity-1983 to 1987, post publicity-1988-1991

When comparing the reporting rates between Triazolam and Temazepam, I had the problem of comparing two drugs marketed in two different years (see Table 4). It was clear that the reporting rate of Amnesia per 100,000 prescription of Triazolam was higher than Temazepam in every year both of the drugs were marketed. Both the ratios of reporting rates were significantly higher than data

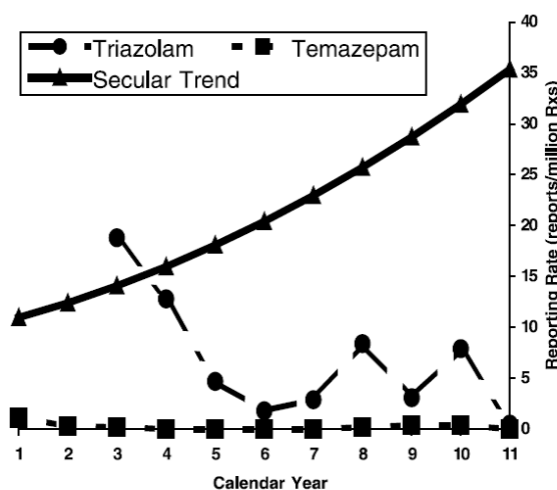
pooled through all years using the Mantel-Haenszel test of the data stratified by the calendar year.

Calendar year	Triazolam			Temazepam			95% CI		
	Number of reports	Rxs <sup>a</sup>	Rate <sup>b</sup>	Number of reports	Rxs	Rate	Rate <sup>c</sup> ratio	Lower limit	Upper limit
1981	0	0	0.0	1	872	1.1			
1982	0	0	0.0	1	3229	0.3			
1983	37	1971	18.8	1	4537	0.2	85.2	14.8	491.6
1984	59	4617	12.8	0	5046	0.0	INF	16.8	INF
1985	32	6870	4.7	0	5438	0.0	INF	6.6	INF
1986	16	9017	1.8	0	5498	0.0	INF	0.5	INF
1987	30	10,458	2.9	0	5424	0.0	INF	4.1	INF
1988	93	11,021	8.4	1	5283	0.2	44.6	7.8	254.5
1989	27	8744	3.1	2	5383	0.4	8.3	2.2	31.6
1990	59	7450	7.9	2	5451	0.4	21.6	5.8	80.2
1991	3	6399	0.5	0	5259	0.0	INF	0.6	INF
Pool	356	66,547	5.3	8	51,420	0.2	34.4	17.3	68.4
Mantel-Haenszel*	356	66,547		6	47,319		45.6	28.9	72.0

From the 1992 CDER Memorandum for Advisory Committee on Neuropharmaceutical Drug Product.  
<sup>a</sup>Rxs: in 1000 prescriptions.  
<sup>b</sup>Rate: number of reports per 100,000 prescriptions.  
<sup>c</sup>Ratio of reporting rates = (rate of triazolam reports)/(rate of temazepam reports).  
<sup>d</sup>Excluding 1981 and 1982 when there was no usage of triazolam.

**Table 4** ADE reports amnesia for Triazolam and Temazepam, by calendar year

When studying the reporting rate of a drug and comparing the reporting rates of two drugs using ADERS data, I realized that the reporting rate typically reduced through the first few years of a drug's introduction (typically, three years) before converging to a steady rate as shown in Figure 1. This was studied and documented as the Webber effect (in Advances in Information Research edited by Rainfold and Velo, Raven Press, 1984). Therefore, I should display the data as in Table 5. The ratio of the reporting rates of Triazolam to Temazepam was greater than 1 by each marketing year and by Mantel-Haenszel approach.



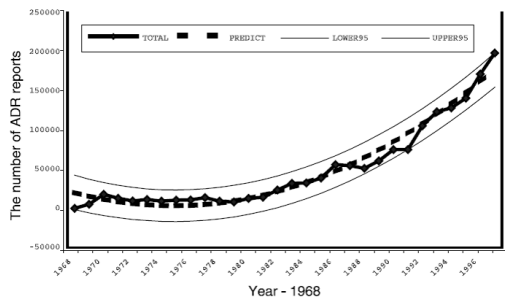
**Fig. 1** Amnesia reporting rates of triazolam, temazepam, and all-drug-all-event reporting rate.

Marketing year	Triazolam				Temazepam				Rate ratio <sup>b</sup>	Lower limit	Upper limit
	Calendar year	Number of reports	Rss <sup>a</sup>	Rate <sup>b</sup>	Calendar year	Number of reports	Rss <sup>a</sup>	Rate <sup>b</sup>			
1	1983	37	1971	18.8	1981	1	872	1.1	16.4	2.8	94.5
2	1984	59	4617	12.8	1982	1	3229	0.3	41.3	7.2	236.5
3	1985	32	6870	4.7	1983	1	4537	0.2	21.1	3.7	122.3
4	1986	16	9017	1.8	1984	0	5046	0.0	INF	—	—
5	1987	30	10,458	2.9	1985	0	5438	0.0	INF	—	—
6	1988	93	11,021	8.4	1986	0	5498	0.0	INF	—	—
7	1989	27	8744	3.1	1987	0	5424	0.0	INF	—	—
8	1990	59	7450	7.9	1988	1	5283	0.2	41.8	7.3	239.8
9	1991	3	6399	0.5	1989	2	5383	0.4	1.3	0.3	6.3
Pooled		356	66,547	5.3		6	40,710	0.1	36.3	16.5	79.7
Mantel-Haenszel		356	66,547			6	40,710		37.0	22.3	61.4
Reports prior to 1988											
Pooled		174	32,933	5.3		3	19,122	0.2	33.7	11.4	99.9
Mantel-Haenszel		174	32,933			3	19,122		34.2	16.8	69.4

<sup>a</sup>Rss: in 1000 prescriptions.  
<sup>b</sup>Rate: per 1 million prescriptions.  
<sup>c</sup>Rate of triazolam/rate of temazepam.

**Table 5** ADE reports amnesia for Triazolam and Temazepam, by year of marketing

Then the nature of ADE reporting in the SRS database shown to be quadratic curve for the data between 1968 to 1996 centered at 1981 as shown in Figure 2. Therefore, for the market year stratum that is two years apart, the ratio should be adjusted by the factor which is the ratio of overall reporting year of the corresponding calendar year. The adjusting factor increased from 0.78 in 1981 (vs. 1983) to 0.81 for 1989 (vs. 1991). After adjusting for the secular trend of overall reporting rates, the stratified table and the statistics became Table 7.



**Fig. 2** All ADR reports with fitted regression and 95% confidence limits.

Marketing year	Triazolam		Temazepam		Adjustment factor, $f_{(t)}$ <sup>a</sup>
	Calendar year	Overall rate	Calendar year	Overall rate	
1	1983	14.1	1981	11.0	0.78
2	1984	16.0	1982	12.4	0.78
3	1985	18.1	1983	14.1	0.78
4	1986	20.4	1984	16.0	0.78
5	1987	23.0	1985	18.1	0.79
6	1988	25.8	1986	20.4	0.79
7	1989	28.8	1987	23.0	0.80
8	1990	32.1	1988	25.8	0.80
9	1991	35.5	1989	28.8	0.81

<sup>a</sup> $f_{(t)}$  = (Overall reporting rate for temazepam calendar year)/(overall reporting rate for triazolam calendar) for the same marketing year.

**Table 6** Expected overall reporting rates and adjusting factor

Marketing year	Triazolam				Temazepam				Rate ratio <sup>b</sup>	Lower limit	Upper limit
	Calendar year	Number of reports	Rss <sup>a</sup>	Rate <sup>b</sup>	Calendar year	Number of reports	Rss	Rate			
1	1983	37	1971	14.6	1981	1	872	1.1	12.7	2.2	73.6
2	1984	59	4617	9.9	1982	1	3229	0.3	32.1	5.6	183.7
3	1985	32	6870	3.6	1983	1	4537	0.2	16.4	2.8	95.2
4	1986	16	9017	1.4	1984	0	5046	0.0	INF	1.8	INF
5	1987	30	10,458	2.3	1985	0	5438	0.0	INF	3.2	INF
6	1988	93	11,021	6.7	1986	0	5498	0.0	INF	9.6	INF
7	1989	27	8744	2.5	1987	0	5424	0.0	INF	3.5	INF
8	1990	59	7450	6.4	1988	1	5283	0.2	33.7	5.9	193.0
9	1991	3	6399	0.4	1989	2	5383	0.4	1.0	0.2	5.1
Pooled		356	66,547	4.2		6	40,710	0.1	28.7	3.1	63.0
Mantel-Haenszel		356	66,547			6	40,710		29.0	20.8	65.7
Reports prior to 1988											
Pooled		174	32,933	4.1		3	19,122	0.2	26.3	8.9	78.0
Mantel-Haenszel		174	32,933			3	19,122		26.6	15.2	76.8

From the 2000 FDA Memorandum "Epidemiologic Review of PPA Safety Issues" for the FDA Advisory Committee on Over-the-Counter Drug Products.  
<sup>a</sup>Rss: in 1000 prescriptions.  
<sup>b</sup>Per 1 million prescriptions, triazolam rate adjusted for overall reporting rate difference in 2 years.  
<sup>c</sup>Rate of triazolam/rate of temazepam.

**Table 7** ADE reports amnesia for Triazolam and Temazepam, by year of marketing adjusted for the secular of all reporting

It became clear that with all potential adjustment for bias, the Amnesia reporting rate of Triazolam was significantly higher than Temazepam. I calculated the ratio for all nine Neuro/Psych events accordingly and displayed in Table 8. They are consistently higher for Triazolam over Temazepam. The details of this analysis was published in a chapter called "Postmarketing Adverse Drug Event Signaling" in Encyclopedia of Biopharmaceutical Statistics Edited by Shein-Chung Chow in 2003.

Event	Triazolam			Temazepam			Rate ratio <sup>c</sup>
	ADRs <sup>a</sup>	Rate	Rank <sup>b</sup>	ADRs	Rate	Rank	
Agitation	250	3.76	4	21	0.52	12	7.28
Amnesia	356	5.35	2	6	0.15	15	36.30
Psychosis	327	4.91	3	15	0.37	13	13.34
Confusion	400	6.01	1	20	0.49	11	12.23
Hostility	101	1.52	6	2	0.05	16	30.89
Seizure	55	0.83	8	1	0.02	17	33.65
Fatality	210	3.16	5	28	0.69	10	4.59
Depression	106	1.59	7	7	0.17	14	9.26
Psycho/depression	45	0.68	9	1	0.02	18	27.53
Usage	66,547			40,710		1.63	11.24

From the 1992 CDER Memorandum for Advisory Committee on Neuropharmaceutical Drug Products.  
<sup>a</sup>Total number of reports over the first nine marketing years of triazolam.  
<sup>b</sup>Rank among all rates in the table.  
<sup>c</sup>Ratio of triazolam reporting rate to temazepam reporting rate.

**Table 8** Reporting rate of drug-ADE

The FDA medical reviewer presented information of weight adjusted dosage to show that Triazolam had higher weight adjusted dosage than Temazepam. The Committee decided to keep the drug on the market but recommended to market with only a low dosage.

Triazolam is marketed now with brand names such as Halcion, Apo-Trazo, Hypam, Trialam, and designer names including chloroxanax, triclozepam and chlorotriazolam. Halcion was banned in United Kingdom with Temazepam being kept on the market instead.

**Attachment:**

Our Man in Nirvana (The New York Times, Jan 22, 1992) <https://www.nytimes.com/1992/01/22/opinion/our-man-in-nirvana.html>  
 By Benjamin J. Stein

In the first week of August 1974, when I was a speechwriter for President Richard Nixon, I walked

into the office of the White House physician, next door to the White House. As I asked for some allergy medicine, I noticed a surgical-steel tray laden with filled syringes, their needles dripping. Next to them was a vial of a potent chlorpromazine tranquilizer.

I knew the corpsman who was loading the tray and I asked him what it was all about. He said it was for someone "over there," jerking his thumb toward the White House. He would not tell me who was getting shots of tranquilizers in those final days of the Administration. He said only that it was "someone who needs to have his head clear, and won't."

This all comes to mind with the news that President Bush has been taking powerful benzodiazepine sedation in the form of the prescription drug Halcion when he travels. It was also revealed over a year ago that the Secretary of State, James A. Baker, had been taking Halcion when he went to conferences overseas.

These are scary tidings. Halcion is the most terrifying drug I have ever used, and its effects are incalculably more frightening when they are at work on the President. I have been taking prescription tranquilizers since 1966. I have used almost every kind imaginable: phenothiazines, chlorpromazines and others I cannot recall. But Halcion, a chemical firstcousin to the tranquilizer Xanax, is in a class by itself for mind-altering side effects. It is not a classic sedative, which basically just slow things down. No, benzodiazepenes are described by Halcion's maker, the Upjohn Company, as "anxiolytics," meaning they literally cut the anxiety in your brain.

When Halcion hits you, it's as if an angel of the Lord appears in your bedroom and tells you that nothing is important, that everything you were worried about is happening on Mars and that nirvana, Lethe and the warm arms of mother are all waiting for you. People who have used heroin tell me Halcion is better than heroin for making bad thoughts simply disappear.

The flip side is that in my experience, as in the cases of many men and women I talk with every day in a program that helps people get off drugs, Hal-

cion took up residence in my head. It does not just do its magic and then disappear. Without it, sleep is almost impossible. I felt depressed and often suicidal for days after taking it and more or less permanently depressed if I took it continuously.

It clouds judgment and forecloses careful analysis. It makes the user alternately supremely confident and then panicky with an unnameable dread. It causes intense, truly terrifying forgetfulness, as well as a serene bliss about that forgetfulness.

A friend of mine took a small dose of Halcion – less than what the President is reported to take – and then carried a gun through a metal detector at an airport. He had forgotten not only that he had a gun with him but also that guns are illegal at airports. Another friend, a lawyer, repeatedly failed to show up at her own depositions when she had taken Halcion the night before.

Halcion is serious medicine. When the President takes it, it's not just a matter between a civil servant and his physician. It's questionable whether the physician should even prescribe it, considering that it is banned in England and is the subject of major litigation and controversy over its side-effects in the U.S. and around the world.

A President with a chemical between himself and reality is the last thing America needs. It's the plot of a suspense novel, not the stewardship that real life and real problems need.

Wake up, Mr. President, we need you on the job. And if you need the drug to sleep when you travel, maybe you should just stay home.

#### **Acknowledgment:**

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*Yi Tsong, Ph.D.  
Division Director  
CDER/OTS/OB/DBVI  
U.S. Food and Drug Administration*



# Dennis Lin Named Head of Statistics Department at Purdue University

*Jennifer Jeffries*

WEST LAFAYETTE, Ind. —Purdue University’s College of Science has named Dennis K.J. Lin to lead its department of statistics.

Lin, who is currently a University Distinguished Professor of supply chain and statistics at Penn State University, will begin his new role at Purdue University in July.



Figure 1: Professor Dennis K.J. Lin

Patrick J. Wolfe, the Frederick L. Hovde Dean of Science says of his new colleague, “We are delighted to welcome to Purdue such an exemplary scholar and leader, who is also recognized for forging deep collaborations across multiple disciplines. As we strengthen the mathematical and computational sciences across Purdue, and launch our new flagship facility for these disciplines, Dennis will help cement our position as a national and global

leader in data science education and research.”

Lin received his Bachelor of Science degree in mathematics from National Tsing-Hua University and his doctoral degree in statistics from the University of Wisconsin —Madison with a minor in computer science. His research interests are design of experiments, quality assurance, industrial statistics, statistical Inference and data science. An elected Fellow of the Institute for Mathematical Statistics, the American Society of Quality, Royal Statistical Society, International Statistical Institute and the American Statistical Association, he will be the 2020 Deming Lecturer at the upcoming Joint Statistical Meeting, the major professional meeting for statisticians worldwide.

“I am thrilled to have the opportunity to lead a department with such an outstanding reputation in theoretically-based research,” Lin said. “I look forward to facilitating current research efforts and the educational mission of the Department of Statistics while exploring ways to bridge theoretical statistical research with the application and development of modern data science.”

## **About the College of Science**

Purdue University’s College of Science is committed to the persistent pursuit of the mathematical and scientific knowledge that forms the very foundation of innovation. Nearly 350 tenure-track faculty conduct world-changing research and deliver a transformative education to more than 1200 graduate students and 4300 undergraduates. See how we develop practical solutions to today’s toughest challenges with degree programs in the life sciences, physical sciences, computational sciences, mathematics, and data science at [www.purdue.edu/science](http://www.purdue.edu/science).

*Writer: Jennifer Jeffries*  
765-496-1682  
[jcjeffries@purdue.edu](mailto:jcjeffries@purdue.edu)

*Sources: Patrick Wolfe*  
765-494-1730  
[patrick@purdue.edu](mailto:patrick@purdue.edu)

# Obituary: Xiangrong Yin, 1966 —2020

Derek S. Young

*Written by Derek S. Young (University of Kentucky), with contributions from John Stufken (University of North Carolina —Greensboro), Solomon W. Harrar (University of Kentucky), Arnold J. Stromberg (University of Kentucky), Katherine L. Thompson (University of Kentucky), William S. Rayens (University of Kentucky), and R. Dennis Cook (University of Minnesota).*

Xiangrong Yin, Professor of Statistics at the University of Kentucky, passed away suddenly on the afternoon of August 11th, 2020 at the age of 54.



Figure 1: Professor Xiangrong Yin

Xiangrong Yin was born in 1966 in the (then rural) village of Changxing, China. As the eldest of three siblings, Xiangrong was always one to take charge and meticulously plan for the future. His conscientious and hardworking traits, combined with his passion for mathematics, led him to study at Hangzhou University, where he obtained a bachelor's degree in the subject in 1986. Xiangrong dreamed of one day becoming a university professor, so he taught in the Department of Mathematics while working towards his master's degree in mathematics, which he completed in 1993. Xiangrong then spent a year pursuing graduate work in the De-

partment of Mathematics and Statistics at McMaster University, however, due to a visa issue his wife from China, Xiaofang Shi, could not join him. Xiangrong then immigrated to the United States in 1996 and spent one year in the Department of Mathematics at Arizona State University, which is when his wife eventually joined him. He finally joined the graduate program in the School of Statistics at the University of Minnesota, where he would receive a master's and doctoral degree in 1998 and 2000, respectively. Xiangrong and his wife would also welcome their first son, Kevin, during this time.

The direction of Xiangrong's research crystallized under his advisor, Professor Dennis Cook, in the area of sufficient dimension reduction, which continues to be a topic of broad and current interest. This would prove to be a fruitful area of research for Xiangrong as he could leverage his innate understanding of deep mathematical concepts to address complex questions. Upon completion of his PhD in 2000, Xiangrong accepted an assistant professor position in the Department of Statistics at the University of Georgia. He would then welcome his second son, Stephen, one year later. Xiangrong would eventually be promoted to a tenured Associate Professor in 2006 and then Full Professor in 2011. In 2014, he moved to the University of Kentucky's Department of Statistics, where he would continue for the rest of his life.

In addition to sufficient dimension reduction, Xiangrong's research interests spanned feature selection, classification and discriminant analysis, high-dimensional regression, information theory, and computing algorithms. Some of the seminal contributions he made in these areas include the introduction of the central  $k$ th-moment subspace to capture information from the mean, variance, and up to the  $k$ th conditional moment of the regression, a way to perform direction estimation in single-index regression that synthesizes ideas of likelihood, correlation, inverse regression, and information theory, and more recently the usage of distance covariance to inform sufficient dimension reduction. Perhaps his most pathbreaking work focused on dimension reduction for the small- $n$ -large- $p$  problem by using methods developed for  $n > p$ . The proposed sequential approach is a quite simple, but highly efficacious framework for addressing this problem. The caliber of his research yielded nearly 70 publications - many in top-tier statistics journals - and numerous invited talks. This level of

productivity increased his visibility as a leader both at his home institutions and in the field of statistics.

Xiangrong's experience translated to him being an impactful advisor and mentor. He was an oft sought-after advisor by motivated graduate students, having co-advised or advised 16 PhD students and two master's students, as well as a mentor to three postdocs. He was able to get the best out of his students and make them better than they thought they could be. All of his students have gone on to successful careers that span industry, academia, and government. However, Xiangrong was especially proud of the fact that 10 of his 16 PhD students landed tenure-track academic positions, a remarkably large percentage of his advisees. Undoubtedly, Xiangrong's inspiration was key to their professional success. At the time of his passing, he was also advising three students. As a mentor, he helped guide junior faculty members through some of the nuances of the academic world. From his own experience, he would highlight the pitfalls and disappointments that we all inevitably face, but he always emphasized how much the successes in one's career trumps any of those negative experiences.

As a teacher, Xiangrong was always reliable for effectively delivering theory courses in probability and mathematical statistics, as well as advanced topics courses. He was well-respected by his students, who often expressed their appreciation for his command of the material. While at times he came across loud during his lectures, everyone quickly learned that it was merely an expression of his passion for the topic. His approach was never misunderstood as he always demonstrated a sense of humor that could lighten any mood. The net result is that Xiangrong infused a certain vibrancy into his department that was appreciated by the faculty and students alike.

Xiangrong also worked tirelessly to serve his department, university, profession, and community. He reenergized the Department of Statistics colloquium series at the University of Kentucky by consistently inviting leaders in the field of statistics. He would regularly be called upon to serve on important committees for the university, such as those involving tenure review. He was in high demand as a peer reviewer for all major journals spanning theoretical, applied, and computational statistics. He was a very active member of the International Chinese Statistical Association (ICSA) and the Institute of Mathematical Statistics (IMS). Through both societies, he worked tirelessly to promote the discipline of statistics. He became a member of ICSA in 2000 and served as an associate editor for *Statistica*

*Sinica*, an ICSA-sponsored journal, from 2014-2017. He organized numerous invited paper sessions at ICSA and IMS conferences, including sessions that could help increase exposure for his students and his fellow junior colleagues. He also served on program committees for conferences organized by the respective societies. At the time of his passing, Xiangrong was also entrusted as the ICSA's Award Committee Chair in an effort to recognize "distinguished achievement in statistical research and unselfish support of the association." He also selflessly devoted numerous hours of community service by volunteering for local and regional math and science competitions at his children's school.

Xiangrong excelled in all facets of his academic career, making him the ideal colleague and faculty member. His collegiality was unrivaled, and each person who worked with him benefited from his wisdom and kindness. Xiangrong genuinely cared to see his colleagues succeed and would always provide his unwavering support. Knowing all of the successes that Xiangrong had in his career, it was all the more humbling that he would extend such kindness and support to his colleagues. His actions truly defined the greatness of his character.

The contributions in Xiangrong's all-too-brief, but accomplished career, culminated in his proudest professional moment in 2019, when he was successfully nominated and awarded Fellowships by both the American Statistical Association (ASA) and the IMS. Such honors are a testament to the positive impact he has left on our field.

Xiangrong's commitment to both his family and work cannot be understated. Xiangrong would proudly boast that he did not own a cellphone, and insisted that if someone needed to contact him, they needed to only call his office phone or his home phone in order to reach him. In some sense, this underscored the duality of his life. Everyone who knew Xiangrong professionally knew how committed he was as a faculty member and statistician. In the weeks prior to his passing, he was working tirelessly to prepare for the fall semester as well as to help finalize a strong roster of speakers for the Zoom seminar series being organized for the upcoming year. Everyone who knew Xiangrong personally knew how much he cared for and loved his family. His tireless love to his children and devotion to his family were evident right up until his final moments.

The way Xiangrong harmonized the demands of his work with the simpler joys in life is very admirable. He always enjoyed meticulously planning his upcoming year's conference schedule and

the exciting travels that accompanied those conferences. He also enjoyed frequent walks through the University of Kentucky Arboretum, on which he would invite his seminar guests to accompany him. Those of us who knew him personally and professionally will remember him as a skilled statistician, a wise mentor, a humble individual, and a great

friend.



*Derek S. Young, Ph.D.  
Associate Professor of Statistics  
Department of Statistics  
University of Kentucky*

## Careers and Personal Relationships

*Hans Rudolf Künsch*

John W. Tukey, one of the leading figures in statistics, was married to Elizabeth Rapp Tukey. In Section 14.1 of his memorial article in *Ann. Statist.* 30, 6 (2002), David Brillinger writes "She was absolutely basic to John's life from when they met and until her death .... One of Elizabeth's remarks tells part of the story behind JWT's contributions: "As the wife of another dedicated workaholic I understand the selfless love and devotion, accommodation and deprivation required to 'keep them on the road.'" How important she was to John Tukey shows also in his eulogy on Elizabeth's death where he said "One is so much less than two".

In a recent interview, Michael Hengartner, a molecular biologist and currently the president of ETH board (the governing body of ETH Zurich, EPF Lausanne and 4 research institutes) was asked: "You raised six children and had a career at the same time. How did you manage this?" His answer was "With little sleep, very little. There are days where I drink seven cups of coffee until noon. ... Seriously: the biggest credit for this goes to my wife. If someone deserves admiration, then it is her."

These two examples illustrate that behind many male scientists there is a woman who gives him emotional support and takes a large share of household care and of responsibility for raising children. It would be interesting to hear also the story from the wives in these two examples, but I only have the following pieces of information. According to Brillinger (2002), Elizabeth Tukey was "Personnel Director at Educational Testing Service in Princeton when she and John met". Later, "she collected 18th and 19th century American furniture ... and was First Chair of the Princeton Township Historic Preservation Commission. She was ill for several years at the end. John cooked for her and dutifully nursed her until he became too tired at which point a care provider was hired." Denise Hengart-

ner, the wife of Michael Hengartner is also a biologist, working at the University of Zurich. She said in another interview "Michael is much involved with the homework of the children. And he takes care of the garden. For us it is right."

I have no reason to doubt that in many cases such an arrangement is right for both, allowing both to have a fulfilling life. John Tukey's words work also the other way round: Two is so much more than one. But on reading about these two examples, I asked myself: How many female scientists have a partner who provides emotional and practical support to them? Can two individuals with equally high ambitions in a competitive academic or business environment have a relation where both take equal shares of obligations and responsibilities and both sometimes forgo an opportunity for the benefit of the other? Is it true that "Professionally ambitious women really only have two options when it comes to their personal partners - a super-supportive partner or no partner at all", as Aviva Wittenberg-Cox wrote in a Harvard Business Review article in 2017?

The answers to such question are complex. Much has to do with stereotypes about the character and the role of women and men in society. These stereotypes say that men are outward looking, preferring competition over cooperation and compromises whereas women care more about harmony in their surroundings and thus are more eager to give in when conflicts arise. But of course such stereotypes are harmful for both men and women as they limit the possibilities for individuals to fully develop their own potential and abilities, trying to fulfill external expectations instead. Changing such stereotypes is a challenging process as they are often unconscious and have been formed during childhood.

The statement above by Wittenberg-Cox might lead women to abandon their plans for an academic career as they judge the chances to find a super-

supportive partner to be low. As an older man I don't know what advice I could give in this case except to express and discuss mutual professional goals and the support expected from the partner at an early stage of a relation. An especially difficult issue is whether to have children and - in case of a positive answer - how to share the responsibilities for raising them.

Men in a dual career relation have to meet the challenging task to remain open to compromises that affect also their career when external pressures arise. Often there is a large gap between how you see your share of obligations and your support given to your partner and how your partner sees it. In order to reduce this gap, it is important to Listen attentively without immediately defending yourself. An example of how men can take unfair advantage of opportunities is a study I read about some years ago in the *New York Times*: There the effect of a gender-neutral policy extending the tenure period of both parents in case of a child birth was investigated, and it was found that many males used this to boost their publication list whereas no such increase was visible among the females in the study.

Men who are tenured and have the privilege to live in a fulfilling relationship can (and should) also contribute to making more women succeed in an

academic career. Examples are to advance more flexible and family-friendly working arrangements, to create a welcoming environment in their group and in the department or to support women at all stages in the career, either directly by supervising PhD students and postdocs or when evaluating research projects or writing letters for candidates under consideration for tenure. This does not mean to apply different criteria depending on the gender, but to avoid being influenced by unconscious biases. Such biases are more common than one might expect. For instance, Moss-Racusin et al. (2012) *PNAS* 109 (41), p. 16474, report an experiment showing that staff in a science faculty rated male applicants for a laboratory manager role as more competent than equally qualified female candidates.



*Hans Rudolf Künsch, Ph.D.  
Professor Emeritus of Mathematics  
Seminar für Statistik  
ETH Zürich  
Switzerland*

## Not Happy? Change Your Mental Model

*Terry Speed*

**Editorial:** This is a reprint from a column article published in the *IMS Bulletin* (Volume 45, Issue 1: January/February 2016; [https://imstat.org/wp-content/uploads/Bulletin45\\_1.pdf](https://imstat.org/wp-content/uploads/Bulletin45_1.pdf)) with IMS' permission.

Over the years I have listened to younger people telling me they are not happy with their situation. I'm no counsellor, and have never claimed to be: I don't like giving advice, and usually say so, and I'm reluctant to generalize from the  $n=1$  case studies I know well (my own).

So what do I do? Usually, I just listen, though I will point out inconsistencies—if only to show that I'm listening. I try to avoid making judgments, and I rarely feel happy suggesting things for others to do. But I do ask questions, and that can be a give-away, partially revealing to what I think, and what

I think someone should do. What have I learned? Sad to say, not much more than I could have learned with a few web searches, or from reading the writings of Lao Tzu (in a reliable translation). But I needed to know the keywords with which to search, or the aphorisms to note well, and they have taken me many years to learn.

Consider the term external validation. This is not an expression that rolls easily off my tongue, but it describes very well what I've often heard, so I've embraced it. I meet unhappy students (and others) who are uncertain whether their work is good enough, looking for praise, feeling deeply saddened by its absence—or worse, convinced that they are no good unless someone tells them they are. In many cases this praise comes from a high-achieving person, with lots of external evidence of their abilities. Perhaps I'm a bad boss in this respect, because I rarely take time off to praise, to congratulate, or to boost, thinking that there are usually better things

to do with my time with others than back-patting. Also, I've always felt that an important part of becoming competent is learning how to assess one's own work, so I think I unconsciously force this issue a little.

Another form of external validation is the need to be appreciated. In general, in our IMS community and elsewhere, contributions to theory are more highly valued than those to applications, so applied statisticians may feel unappreciated. We hear a lot about data science these days, and many of us feel that a good deal of the hype is what we have been doing for much of our lives: applied statistics. Clearly, the funding bodies, presidents and deans pouring money into data science don't appreciate us. So what? Of course elsewhere probabilists are probably feeling unappreciated, perhaps by mathematicians. The web has a lot to offer on this, including 35 Quotes On How To Care Less About What Others Think, one of which is attributed (most likely falsely) to Lao Tzu: Care about what other people think and you will always be their prisoner.

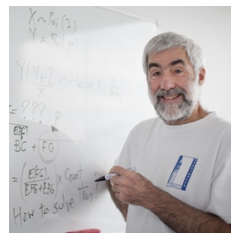
Something I hear a lot from unhappy people is that everyone else is better than them. This can be crippling. I've seen it in students who join the Berkeley stat graduate program, and become surrounded by people who seem to be so much more capable, more productive, more promising than they are. This feeling of inferiority can kill their joy, extinguish their ambitions and make it hard or even impossible for them to continue. I try to point out that aptitude for statistics has many dimensions, and that even if it only had one dimension, there will always be people above you and people below you. Is it likely that the number one statistician is

the only happy one? What does your position in the ranking matter if you are happy doing what you are doing? Again, the web has lots on this, including How to Stop Comparing Yourself to Others, and another aphorism attributed to Lao Tzu: When you are content to be simply yourself and don't compare or compete, everyone will respect you.

For me as a listener, my challenge is to get people moving in a better direction without telling them what to do. Writing (on the web) in Psychology Today Elizabeth R Thornton calls the issues I have discussed mental models, and asks: "Do yours help or hurt you?"

Statisticians are very familiar with models, and know that some are fit for their purpose, while others are not. We have diagnostics to examine models, and ways of finding better models. It seems to me that when one of us is unhappy for reasons similar to those I have described above, we might draw on the model analogy. We could scrutinize our current mental models for deficiencies, and perhaps move to alternatives that might help rather than hurt us. As with the statistics literature, there is lots of advice on how to do this in books, articles and blogs.

Changing your mental models might be all it takes to become happier.



*Terry Speed, Ph.D.  
Professor and Lab Head  
Bioinformatics Division  
Walter & Eliza Hall Institute of  
Medical Research  
Parkville, Victoria  
Australia*

# COVID Coping and The Law of Most People

Xiao-Li Meng

**Editorial:** This is a reprint from a column article published in the *IMS Bulletin* (Volume 49, Issue 3: April/May 2020; [https://imstat.org/wp-content/uploads/2020/04/Bulletin49\\_3.pdf](https://imstat.org/wp-content/uploads/2020/04/Bulletin49_3.pdf)) with IMS' permission.

Xiao-Li Meng writes: The arrival of COVID-19 has ignited global anxiety about how we deal with uncertainty and risk. Uncertainty blurs our collective vision, and risk takes our breath away—alas, sometimes literally. Since we statisticians and probabilists have always been proud of being at the forefront of studying uncertainty and risk, two questions naturally arise. First, in our daily lives, are we coping with uncertainty and risk better, on average, than are people in other professions? Second, how can we use our knowledge and expertise to help others during these unprecedentedly unsettling times?

Regarding the first question, I am unaware of any study. But being a statistician, I can offer my  $n=1$ . You can then add yours, so we will have a chance to claim replicability. I suffered from aviophobia for a while. Any turbulence or unexpected noise during a flight would immediately wet my palms (thank God, only my palms). I am now cured (almost surely) thanks to (A) a psychologist's suggestion to listen to music, (B) some poorly written theses, and (C) my statistical sanity. I gather (A) requires no elaboration, other than that its essence is to distract my fearful mind; (B) then comes in handy, especially for very long flights. I still recall how I wished desperately for a 14-hour flight to China not to land while I was still "red-inking" the final chapter. The ultimate cure, however, came from (C), when I finally internalized the fact that flying is far safer than any other means of transportation that I take, yet none of the others had triggered any fear. Therefore, it would be insane for me as a (reputable) statistician to fail to reason myself out of aviophobia.

Each of us lives in fear during some periods of our lives—fear of losing a loved one, of a terrible diagnosis, of major financial or reputational loss, not to mention the fear of rejection in its various guises. Humans seem to be biologically wired to give irrationally high weighting to extreme out-

comes when we contemplate decisions under uncertainties, whether those outcomes are desirable (winning lotteries) or disastrous (plane crash). In the current crisis, fear of the worst outcome may motivate some of us to wash our hands and practice social distancing with more seriousness. But it can also put excessive strain on others, depriving them of their sleep and weakening their immune systems. A healthy mental state is always about moderation and balance: be prudent but not frightened.

Since I overcame my aviophobia by drawing upon the resource of statistical sanity, reflecting upon "The Law of Most People" has been therapeutic whenever I fear my fear is going to consume me. This law stipulates that *the worst fears (or best dreams) of most people cannot be realized*. This simply restates that extreme tails of a distribution have far less mass than the middle portion. (When tails have more masses than the middle portion, then the phrase "extreme" loses its meaning.) The thought that I am most likely to be one of the "most people" provides the firewall I need to keep my anxiety at bay, permitting me to live without excessive fear. Please help to spread this free self-help pep talk faster than any virus can, as you, my fellow uncertainty experts, know far better than others that it will apply to most of the people you talk to (except you won't know to which ones). And that suggests a partial answer to the second question.

The other part of the answer comes from a mix-up that may have already irritated you: I have mixed population frequency with personal probability. But this is an unavoidable mix. All numbers reported about COVID-19 are for measuring population risks, from infection percentages to the risk of death. But as individuals, we tend to focus on individual risks. What's the chance that I will get infected? What's the chance that a loved one will die from COVID-19? Whereas population percentages and risks are easy to define—but not easy to estimate, especially given all kinds of dark data [see the previous XL-Files: <https://imstat.org/2019/12/15/xl-files-time-travel-and-dark-data/>]*—*individual risks are a much more nuanced concept. What does it mean that my chance of infection is 5%? Does it mean that I will get it if I shake hands with 20 virus carriers? Or by taking 20 flights?

We, the uncertainty experts, can help others understand the concept of their individual risk, and that this can be quite different from what they read online, depending on which sub-population they judge themselves as belonging to. Careful consideration of individual risk can control extreme thoughts that may lead to reckless behavior or excessive fear. Dealing with uncertainty and fear is never easy, but having an informed and rational internal dialogue can tame our ill-considered im-

pulses or catastrophizing tendencies. We can all help others to conduct such internal dialogs. The process of helping others is also therapeutic in and of itself. The more our minds are engaged in helping others, the more easily we will get through this most stressful time of our lives. May our community of statisticians and probabilists draw strength from the inherent sanity of our discipline, and energy from the opportunities we have to help others.

## Why (good) Statisticians Tend to be Happier

*Xiao-Li Meng*

**Editorial:** This is a reprint from a column article published in the *IMS Bulletin* (Volume 46, Issue 5: August 2017; [https://imstat.org/wp-content/uploads/Bulletin46\\_5.pdf](https://imstat.org/wp-content/uploads/Bulletin46_5.pdf)) with IMS' permission.

Contributing Editor Xiao-Li Meng writes:

A good number of people have asked me about what have been the best and the worst parts of being a dean. Whereas the worst part should only be shared over two glasses of Long Island iced tea (my first and still the most memorable iced tea I had in the US, though I have no memory of who paid for it), there are several “best parts” I am willing to share any time. Among the best parts are the opportunities to speak to many young talents about the roles of statistical thinking in their lives, especially as they are about to start their post-university lives. Perhaps as a fitting souvenir of having survived deanship for five years, I had the honor of delivering two graduation speeches this May, instead of the usual one for GSAS (Graduate School of Arts and Sciences) at Harvard. The extra one was at the kind invitation of the Department of Mathematics and Department of Statistics at the University of Illinois at Urbana-Champaign, where I took the opportunity to repeat a similar message as conveyed in two previous XL-Files (<https://imstat.org/2013/11/xl-files-romantic-regression-towards-the-mean/> and <https://imstat.org/2016/05/xl-files-lectures-marriages-that-last/>). For those of you who just cannot get enough of regression to-

wards the mean (and in regions where YouTube is not MuteTube), you can find my 15 minutes of fame between minutes 29 and 44 in the following video: <https://www.youtube.com/watch?v=xQGBKNHLFqM&feature=youtu.be>.

For my regular GSAS one (which has been always held at Harvard's largest classroom, Sanders Theater), I decided to give the Law of Large Numbers (LLN) a shot, especially as it has helped me to be a happier person—and a better fundraiser. Curious? Read on...

“How many of you heard my welcoming speech when you joined GSAS, in this very Sanders Theater? OK, I gather the rest of you either skipped your new student orientation or didn't feel the urge to complete your degree within five years. Thanks to President Faust and Dean Smith's trust and many colleagues' strong support, I have had the privilege to serve as GSAS Dean for the past five years, and this commencement marks the completion of my first term as GSAS Dean. Naturally I reflect on what I have learned, starting from day one. I surmise that how I felt five years ago is not very different from how many of you are feeling right now: excited, anxious, and bedeviled by self-doubt: am I really ready to navigate a new world?

“Well, if you are seeking reassurance from me, my response will be a very short one: NO! I was not ready, nor are you ready for whatever your new world will bring, even if it's just another degree program. A curveball is easy to handle because at least you know it is a ball, and the curve is eventually coming in your direction. But you just don't know what you don't know.

“I am not trying to scare you off so you can take



the dropout option —it's too late for that anyway, and indeed there is no way to drop out of life, only to drop dead. But I would like to share with you a key lesson that I learned in navigating a new world: the insights generated from whatever disciplines you studied can help you in ways that you may not expect. And God forbid, should your field not generate any useful insights (I'm sure Dean Smith will want to know which field this is, so he can stop funding it), you are always welcome to borrow mine, that is, statistics.

"So let me give you an example. A good part of my job is fundraising, for which I received no training whatsoever. But I was intrigued by it. Why would anyone give me money just because I asked for it? Can I be that persuasive or charming?

"I doubt that many of you have had fundraising experience. But I surmise that the following scenario may sound familiar to most of you. You were introduced to someone at a party and you hit it off. The evening was too short. You made an arrangement to have dinner, and it went as beautifully as you had hoped. You started to communicate with each other more frequently. The feeling was getting stronger and it seemed mutual. Your heart was starting to beat faster: OMG, this might be The One!

"Then, suddenly, it's all silence. Your invitation for the next dinner was never answered, no text, no email, no nothing. You were completely puzzled. What did I do wrong? Did I move too fast? Did I misinterpret the whole thing from the very beginning? Am I just not that charming?

The chances are that you will never find out the real reason, no matter how much time you spend driving yourself crazy replaying every moment together, speculating, regretting, or even feeling guilty. In fundraising, that person could be someone who indeed had intended to give, but then their business went south; or someone who was flirting with multiple institutions and then decided to commit to another one; or someone who was treating philanthropy as an investment, and then realized that definitely was a mistake.

"Indeed, my initial mistake was to expect a positive return from every one of my investments, that is, the time and energy I put into building each fundraising relationship. But such expectations only bring disappointment, frustration, and even self-doubt—am I perhaps just not good at this job? Fortunately, my statistical training soon stopped me from consuming myself with these not very helpful thoughts.

"You see there are simply too many factors that are beyond my control, or even outside my aware-

ness, that would determine the ultimate outcome of each fundraising effort. It is just unwise and unproductive for me to worry too much about each case and to overthink it. What I can predict reasonably well is the total amount of funds raised annually, which reflects the overall fundraising effort. That's the essence of the Law of Large Numbers: while individual outcomes can vary tremendously for reasons hard to decipher, with enough trial and error, we can expect a rather stable average, capturing a central characteristic of our overall effort. That statistical insight redirected my energy from working unproductively on trying to save every fundraising relationship, to building and communicating the clear message of how additional funding can establish, sustain and enhance GSAS's global leadership in supporting students' well-being, scholarly training, and professional development.

"I also started to enjoy those fundraising conversations much more, because I no longer needed to worry about where any particular conversation would lead. All I cared about was knowing that as long as we communicated our message loudly and clearly, to as many people as possible, we would do better and better. Indeed, one day I received the largest check in my life from a GSAS alum, with a simple note: "Dean Meng, here is my number. Give me a call." I called, and the alum told me that he very much liked the effort we were making and wanted to support it in ways he could. That's how we were able to fund the new Center for Writing and Communicating Ideas, located in Dudley House, a center that celebrates writing and communication as a critical part of graduate education; it might already have helped a few of you to arrive here today.

"So, the Law of Large Numbers helped me to be more productive and happier. And I hope it can help you, too, as you navigate your new world, both professionally and personally. You of course should have high aspirations and you should work hard to achieve your goals. But you should not expect a positive return from every effort you make. That would make you miserable, and worse, make everyone around you miserable. I have seen some very unhappy colleagues, unfortunately in every generation, trying to receive recognition for everything they do, to compete and expect to win every grant or award, and to advance their careers at every possible opportunity. Perhaps the saddest thing is that many of them would have achieved what they wanted if only they hadn't tried so hard, thereby making themselves less respected or liked by their peers. I certainly hope you won't become one of them. With 95% confidence, I can also guar-

antee that your love life won't last too long if you expect an ounce-for-ounce return every time you do something nice for your love interest. Keeping the Law of Large Numbers in mind can help to remind you that the payoff of your effort comes in aggregation and on average. That should be your aim, not to expect unrealistically positive returns in every effort you make.

“To practice what I just preached, and having given each of you some profound advice on how to have a happy (or at least a happier) life, I am not expecting a positive return from each of you. But I do expect that someday I will receive a few checks from some of you with a note, “Dean Meng, here is my number. Call me.” In fact, I am willing to expect even less. No need to write a note; just put your number on your check. I will call. Until then, may the Law of Large Numbers always be with you, and may your life be happier than those who don't respect the law. Congratulations!”

Of course, all such life lessons have to be taken with “a grain of statistics,” especially regarding their precise statements. For example, a serious

reader might worry about if the assumptions for LLN can be hold here —surely i.i.d would be problematic, as it would imply that things never improve (or deteriorate) on average. As I have already used up twice as many pages as my regular allotment permits, I'd leave it to the interested readers to impute what I didn't have space (or time) for. For the rest, think about LLN the next time you are so bothered by a particular outcome. I guarantee that the thought would make some of you happier, but just don't ask me which ones of you ...



*Xiao-Li Meng, Ph.D.  
Whipple V. N. Jones Professor  
of Statistics  
Department of Statistics  
Harvard University*

# Upcoming Events

Please find below a list of upcoming ICSA meetings. This list also appeared on the ICSA website. Meetings not included in this list are not official ICSA meetings. If you have any questions, please contact Dr. Mengling Liu, the ICSA Executive Director ([executive.director@icsa.org](mailto:executive.director@icsa.org)).

## ICSA Sponsored Meetings:

### ICSA 2020 Applied Statistics Symposium

December 13-16, 2020

Virtual

Dr. Hulin Wu at The University of Texas Health Science Center at Houston ([hulin.wu@uth.tmc.edu](mailto:hulin.wu@uth.tmc.edu)) chairs the Organization Committee. For more information about the conference, please visit <https://symposium2020.icsa.org/>.

### ICSA 2021 China Conference

July 2 - 5, 2021

Xian, China

For information, please contact Scientific Program Committee Co-Chairs Professor Yingying Fan at [fanyingy@marshall.usc.edu](mailto:fanyingy@marshall.usc.edu) and Professor Chunjie Wang at [wangchunjie@ccut.edu.cn](mailto:wangchunjie@ccut.edu.cn).

### ICSA 2022 China Conference

July 1 -4, 2022

Chengdu, Sichuan, China

## ICSA Co-sponsored Meetings:

Please find below a list of upcoming ICSA co-sponsored meetings. This list also appeared on

the ICSA website. Meetings not included in this list are not officially co-sponsored meetings. If you have any questions, please contact Dr. Mengling Liu, the ICSA Executive Director ([executive.director@icsa.org](mailto:executive.director@icsa.org)).

### Duke-Industry Statistics Symposium

April 21-23, 2021

Durham, NC

More details about program, registration, short course, poster session, and travel information for this two-and-half-day symposium can be found at the symposium website <https://sites.duke.edu/diss>.

### The 8th Workshop on Biostatistics and Bioinformatics

Spring, 2021

Atlanta, GA

For detailed information including registration, please refer to <https://math.gsu.edu/yichuan/2020Workshop/>

### The 63rd ISI World Statistics Congress 2021

July 11-16, 2021

Virtual

More information can be found on the ISI 2021 website [www.isi2021.org](http://www.isi2021.org).

### IMS Asia Pacific Rim Meeting

January 5-8, 2022

Melbourne, Australia

For more information about the conference, please visit <http://ims-aprm2021.com/>.

# Short Courses – Moved to Virtual

## 2020 ICSA Applied Statistics Symposium

Dec 13-16, 2020 Westin Galleria Houston, Houston, Texas, USA



The ICSA 2020 Applied Statistics Symposium is proud to offer the following short courses for conference attendees. The symposium will be held from Sunday, Dec 13th to Wednesday, Dec 16th, 2020, virtually and supported by **Cvent** (see the conference website: <https://symposium2020.icsa.org/>). This will be the 29th annual ICSA symposium.

### 9 courses to choose from:

- Five full day courses
- Four half day courses

These course will run concurrently on Dec 13, 2020.

Scholarship for students and junior faculty: \$20 for half-day, \$40 for full-day. Apply before Oct 31, 2020!

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Now**

### Optional courses:

A Short Course on Absolute Risk Prediction (Full Day)

Mitchell H Gail & Ruth Pfeiffer

Empower Statistician with Spark, Machine Learning and Deep Learning (Full Day)

Hui Lin & Ming Li

Statistics and Machine Learning Methods for EHR Data: From Data Extraction to Data Analytics/Predictions (Full Day)

Hulin Wu, Vahed Maroufy & Ashraf Yaseen

Statistical Analysis of Microbiome Data with R (Full Day)

Yinglin Xia & Ding-Geng Chen

Utilizing Real-World-Data and Real-World-Evidence in Drug Development and Evaluation (Full Day)

Binbing Yu, Bo Lu, & Qing Li

Multivariate meta-analysis methods (Half Day – morning)

Haitao Chu & Yong Chen

Including historical data in clinical trial design and analysis (Half Day – morning)

Frank Fleischer & Martin Oliver Sailer

Estimands and Statistical Methods for Missing data in Clinical Trials (Half Day – afternoon)

Frank Liu & Mandy Jin

Statistical Remedies for Flawed Conventions in Medical Research (Half Day – afternoon)

Peter F. Thall