ICSA Bulletin

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From the Editor

Chixiang Chen

Dear ICSA members:

Happy New Year to all ICSA members! In my role as the newly appointed Bulletin Editor of the International Chinese Statistical Association, it brings me great honor to present the latest issue of the ICSA Bulletin, dedicated to the theme of "Emerging Opportunities in Statistics and Data Science."

I wish to extend my sincere gratitude to our esteemed leadership team, board members, and the entire community for their substantial and unwavering support in our collective efforts to deliver the ICSA Bulletin to its members. It was an honor to collaborate with the 2024 president, Dr. Xun Chen, and the 2023-2025 executive director, Dr. Jun Zhao, to ensure the timely publication of this New Year issue. I also want to express my appreciation to all the contributors who shared their expertise and valuable insights in this edition. Special thanks go to the ICSA executives and committee chairs for their support in our bulletin endeavors.

In this issue, we present a compilation of outstanding articles and perspectives from diverse experts in statistics and data science, representing academic institutes, NIH, FDA, and pharmaceutical companies. The topics covered range from artificial intelligence and training opportunities for the next generation to statistical innovation in pharmaceuticals and data science skills in the real world. Specifically, Professor Xiao-Li Meng continues to share his insights into his encounter with ChatGPT in the "XL-Files" column, a reprint from a column article published in the IMS Bulletin with permission. We are particularly delighted to feature an invited article from Dr. Michelle Shardell, Dr. Scott Goldie, Dr. Emily Morris, Dr. Paul Albert, and Dr. Wei Shen, offering valuable insights from a webinar on industry and government internship opportunities for international graduate students. Additionally, we express our sincere gratitude for another invited article from Dr. Chengguang Wang and Dr. Satrajit Roychoudhury, outlining opportunities and challenges in statistical innovation in pharmaceuticals, along with highlights from the Inaugural Statistical Innovation Community Summit. Finally, we thank Dr. Kelly H. Zou for sharing excellent top-ten tips for statisticians and data scientists across diverse practice areas and career sectors, and we congrat-

ulate the successful recap of an ICSA 2023 expert panel.

Moreover, this issue is filled with many important updates and announcements regarding the ICSA community. It includes messages from the 2024 ICSA President, Dr. Xun Chen, the 2023 ICSA President, Dr. Gang Li, the 2024 ICSA President-Elect, Dr. Hongyu Zhao, as well as the 2023-2025 executive director, Dr. Jun Zhao. The official election results for the 2024 ICSA officers are also included, along with a call for nominations for the 2024 ICSA Awards and the 2025 ICSA Officer positions. This issue also includes exciting news from the ICSA-Taiwan Chapter and the ICSA-Canada Chapter and a report from the ICSA Outreach and Engagement committee. In addition, the issue provides reports on the ICSA Springer Book Series in Statistics, Statistics in Biosciences, and Statistica Sinica. The financial report for 2023 is included, along with information on upcoming ICSA-sponsored or co-sponsored meetings and conferences.

I hope that this issue will capture the interest and provide value to all members, and I eagerly await your feedback. Special thanks to my assistant, Dr. Biyi Shen (Regeneron Pharmaceuticals), for her valuable support in formatting and assembling the files for this issue.

In closing, I extend my warmest wishes for happiness and good health to all our members and their families in the New Year of the Dragon. Let us continue to collaborate and work together to strengthen and energize our ICSA community in the future. Thank you for your unwavering support and dedication, and I look forward to your active participation in upcoming issues of the ICSA Bulletin!

Best,
Chixiang

Chixiang, Ph.D.
Editor-in-Chief, ICSA Bulletin
Assistant Professor
Department of Epidemiology and Public Health,
Department of Neurosurgery,
Insitute for Health Computing (Bethesda),
University of Maryland, School of Medicine.

From the 2024 President, ICSA

Xun Chen

Dear ICSA Members, Sponsors, and Friends,

Happy 2024!

When I reflect upon my journey with the association over the past year, I am humbled by the selfless contributions of many individuals who have volunteered their time and expertise to advance the mission of ICSA. I witnessed the sheer passion and unwavering dedication from many of you, especially from those who have dedicated years or even decades to the association, which embodies the spirit of our association and serves as shining examples for me.

As the president of ICSA in 2024, I would like to extend my welcome to the leadership team, which includes Jun Zhao, ICSA Executive Director (2023-2025), Rui Feng, ICSA Treasurer (2023-2024), Gang Li, ICSA past president (2023), Hongyu Zhao, ICSA president-elect (2024) and myself in the ICSA Executive Committee, and our recharged ICSA Board of Directors and operation committees. The leadership team is committed to sustaining ICSA establishments in sponsoring and organizing inclusive and influential statistical conferences, including but not limited to, the ICSA 2024 Applied Statistics Symposium in Nashville, Tennessee (June 16 –19, 2024), and the ICSA 2024 China Conference in Wuhan, China (June 28 –June 30, 2024); in recognizing outstanding young researchers; in sponsoring/co-sponsoring the state of the art publications such as Statistical in Biosciences and Statistica Sinica; etc. Furthermore, to enhance our efforts in outreaching and engagement in the past year, we will launch a series of Webinars in the new year to build a vibrant network where statisticians from different fields, where different research, application and development interests can come together, exchange ideas, learn from each other, nurture career advancement and ultimately, make more significant impact within our profession. We are also committed to continually fostering diverse and inclusive environment in ICSA where voluntary service is not only valued but celebrated. As we advance our renown leadership and impact in academia, more efforts will be made to promote and broaden the applications of statistical techniques in industry and government, through ICSA sponsored conferences, publications, and webinars etc. We also plan to supplement the by-laws to ensure the formation of more representative leadership team, board of directors, operation committees and thus more inclusive nominations and recognitions on this platform. Please check out the ICSA official website regularly and stay tuned on ICSA newsletters and bulletins for more updates and call-for feedbacks and actions.

Once again, I would like to express my deepest gratitude to all ICSA members, sponsors, and friend and look forward to working with you all. Together, we can build upon the great foundation laid by our esteemed predecessors, unleash the power of collective action to create more opportunities for statisticians around the world in learning, growth, and innovation. Please do not hesitate to email me at `xun.chen@sanofi.com` or ICSA executive committee at `executive.director@icsa.org` for any suggestions on how we can better fulfill the missions of ICSA.

Thank you and wish you all a healthy and prosperous year of the Dragon.

Xun Chen, Ph.D.
2024 President,
Global Head of Biostatistics and Programing,
Sanofi.

From the 2023 President, ICSA

Gang Li

Dear ICSA Members and Friends,

Happy 2024 and the Year of the Dragon!

On January 1 2024, ICSA successfully completed its annual leadership transition. Having served as the ICSA President in 2023, I have now transitioned into the role of the ICSA Past President. Dr. Xun Chen, who was the President-elect in 2023, has assumed the position of the ICSA Pres-

ident in 2024. Additionally, Professor Hongyu Zhao joined the ICSA leadership team as the 2024 ICSA President-elect.

In 2023, the ICSA community witnessed an unusually active and rewarding year in the post-pandemic era. Among other activities, ICSA has successfully hosted three major conferences in the US and Asia in a short two-month span during the summer 2023, some of which achieved record-breaking attendance. (Please see my message in the August 2023 Bulletin Issue for a summary of many ICSA activities and achievements in 2023.) The momentum did not wane after the summer. ICSA teams and volunteers have remained dedicated, working tirelessly on numerous ongoing initiatives, including preparations for the 2024 ICSA Applied Statistics Symposium (June 16-19, 2024, Nashville, Tennessee), the 2024 ICSA China Conference (June 28-30, 2024, Wuhan, China), the 2025 ICSA International Conference (December, Taiwan), and the launching of an ICSA Webinar series in 2024.

On behalf of the ICSA community, I would like to take a moment to express our deep appreciation to all those who have generously volunteered their valuable time to serve our community. ICSA operates entirely through the efforts of volunteers like yourself. The dedication and contributions of each volunteer play a pivotal role in fostering the growth and prosperity of our community. THANK YOU!

On a personal level, it has been truly a privilege to serve as the ICSA president in the past year. Without a doubt, it has been the most rewarding experience in my professional life. I have learned so much from everyone I have worked with. The generosity and inspiration I feel from our community are beyond words and will leave a lifelong impact on me.

Looking ahead, I am filled with anticipation for a productive new year for ICSA under the leadership of Xun Chen, our 2024 president, and the committed team. With the collective efforts of the ICSA community, I am confident that the organization will continue to thrive and reach new heights in 2024.

Thank you so much! Wish everyone a joyful, healthy, and prosperous 2024!

Cheers,

Gang Li, Ph.D.
2023 ICSA President,
Professor of Biostatistics and Computational Medicine,
UCLA.

From the 2024 President-Elect, ICSA

Hongyu Zhao

Dear ICSA Members,

I am honored to be elected as the 2024 ICSA President-elect to serve our society. It has been a privilege to be a member of ICSA since the beginning of my career. I have benefitted tremendously from the guidance and support of many mentors, friends, and colleagues in the ICSA family. I would like to take this opportunity to thank all of you who have dedicated countless hours to our society and for your trust. In this coming year, I look forward to learning from the fantastic leadership of ICSA, the board of directors, committee members, and all of you to continue building our community to serve all the members, professionally and personally. There are many challenges and more opportunities presented to ICSA, and our society will continue to grow as we come together to share our visions, devote efforts, and help each other. I wish everyone the very best in the Year of Dragon!

Hongyu Zhao, Ph.D.
2024 President-elect
Ira V. Hiscock Professor of Biostatistics,
Professor of Statistics and Data Science, and Professor of Genetics,
Yale University.

From the Executive Director 2023-2025

Jun Zhao

Dear ICSA members,

It has been in the beginning of 2024, I wish all ICSA members and your families to have a safe, healthy, successful, and prosperous new year!

This is the time we recap what we have achieved in the past year, and more importantly, reset and refresh our mind on the goals to make the ICSA be a better scientific association and a better platform for all fellow members.

In 2023, it was a busy year for the ICSA and all members. Your busy schedules may be contributed by your cutting-edge scientific research, or the era of the end of the pandemic stagnation, or due to the blooming in data science in general. The ICSA achieved its goals through many volunteer works done by board members, committee members, and many individual members. Their work and contribution are fully appreciated by the Executive Committee and all ICSA members. Here I want to express my sincerely thanks to all the support you have given to our association and the statistical society. In the last year, I attended many ICSA sponsored and co-sponsored conferences, and had chances to meet and chat, face to face, with a lot of ICSA members and friends. Regardless of the conference venue and location, the organizers including many volunteers made significant effort, dedication, and contributions to promote statistical science and the ICSA. They deserve compliment and applause from all of us. Importantly, I also noticed that many members, senior or new, especially young statisticians, have expressed their interest to contribute and serve in the ICSA.

I have been working with many board members and committee members. Their dedication and contribution to the association are well recognized. Meanwhile, I heard voices that many ICSA members have made lots of meaningful suggestions and provided ideas to optimize policy and operational work. The good news is that some of their suggestions have been implemented. There are quite some task forces are on-going, to name a few, such as social media to enhance communication, and webinars to benefit members.

When we cheer to a new year, this is also an opportunity for us to enhance and improve. In 2024, let's work together to make the ICSA stronger and better. In addition, I hope I can meet and chat with you in any of the ICSA conferences: Applied Statistics Symposium, China Conference, Chapter conferences in Taiwan, Midwest, or Canada, other ICSA co-sponsored conferences, or at the ICSA Banquet during the JSM.

Jun Zhao, Ph.D.
ICSA Executive Director (2023-2025) ,
Senior Director, Statistics,
Antengene Corp.

ICSA 2024 Core Members

EXECUTIVES:

- President: Xun Chen (`xun.chen@sanofi.com`)
- Past-President: Gang Li (`vli@ucla.edu`)
- President-Elect: Hongyu Zhao (`hongyu.zhao@yale.edu`)
- Executive Director: Jun Zhao (2023-2025, `executive.director@icsa.org`)
- ICSA Treasurer: Rui Feng (2022-2024, `treasurer@icsa.org`)
- The ICSA Office Manager: Grace Ying Li (`oicsa@icsa.org`)

COMMITTEES:

Nominating and Election Committee:

- Chair: Yichuan Zhao (2023-2024, `yichuan@gsu.edu`)

Program Committee:

- Chair: Xinping Cui (2023-2024, `xpcui@ucr.edu`)

Membership Committee

- Chair: Zhigen Zhao (2023-2024, `zhaozhg@temple.edu`)

Awards Committee:

- Chair: Zhigang Li (2023-2024, `zhigang.li@ufl.edu`)

Special Lecture Committee(coordinate keynote speaker):

- Chair: Ming Tony Tan (2023-2024, `mtt34@georgetown.edu`)

Publication Committee:

- Chair: Runze Li (2023-2024, `rzli@psu.edu`)

ICSA Outreach and Engagement Committee :

- Chair: Jin Zhou (2023-2024, `jinjinzhou@g.ucla.edu`)

Finance Committee:

- Chair: Rui Feng (2022-2024, `ruifeng@pennmedicine.upenn.edu`)

Financial Advisory Committee:

- Chair: Xiangqin Cui (2023-2024, `xiangqin.cui@emory.edu`)

Lingzi Lu Award Committee (ASA/ICSA):

- Chair: Chan, Ivan (2023-2024, `ivan.chan@bms.com`)

IT Committee:

- Chair: Chengsheng Jiang (2023-2024, `website@icsa.org`)

Archive Committee:

- Chair: Naitee Ting (2023-2024, `naitee.ting@boehringer-ingelheim.com`)

Newsletter Editor

- Grace Li (2023-2024, `li_ying_grace@lilly.com`)

Bulletin Editor

- Chixiang Chen (2024-2026, `chixiang.chen@som.umaryland.edu`)

Call for Nominations of Candidates for 2025 ICSA Officers

Due by April 1, 2024

The ICSA 2024 Nomination and Election Committee is seeking for nominations of candidates for ICSA 2025 officers: ICSA President-Elect 2025 and ICSA Board of Directors (2025-2027). The committee plans to identify two candidates for the ICSA President-Elect 2025 and twelve candidates for ICSA Board of Directors (2025-2027) for general election. Candidates for all positions need to be active ICSA members in 2023 and 2024 and have strong interests in serving ICSA. According to the ICSA Bylaws, President-Elect should be from academia, non-academia, or no restriction, on a three-year rotational basis – one year from academia, another from non-academia, and the third year open. The candidates for President-elect 2025 will be from academia. We hope that the candidates for Board of Directors are balanced with respect to gender, region, and area of employment (academia, industry/business, or government). Please file your nomination through the Google form at `https://forms.gle/XcmRKQqs78w aiGsH7` by April 1, 2024. You may contact Dr. Yichuan Zhao at `yichuan@gsu.edu` if you have any questions.

Call for Nominations for 2024 ICSA Awards

The ICSA Award Committee will review and evaluate nominations of each award.

Distinguished Achievement Award

The ICSA Distinguished Achievement Award is presented to individual(s) "In recognition of the distinguished achievement in statistical research and unselfish support of the association", as noted at the ICSA website: `https://www.icsa.org/distingui shed-achievement-award/`.

Eligibility: Nominees must be ICSA members with good standing, being a member of ICSA for at least the past three consecutive years. Members of the Award Committee and the Executive Committee are not eligible to receive the award during the term of service.

Nomination Process: Nominator is responsible for preparing a complete package for the nominee that should at minimum contain the following 1) nominee's most recent curriculum vitae; 2) cover letter from the nominator summarizing the nominee's achievement in statistical research and unselfish support of the association. Besides items 1) and 2), additional nomination material such as recommendation letters is encouraged but not required. Please send the nomination materials to Award Committee Chair, Zhigang Li, via email to `zhigang.li@ufl.edu` with the subject entitled "Distinguished Achievement Award Nomination". Nomination items can be sent as pdf, ps or plain text attachments.

Deadline: The deadline for nomination is March 1, 2024.

Outstanding Young Researcher Award

The ICSA Young Researcher Award is presented to young scholar(s) "In recognition of the outstanding research in statistical theory, methodology, and/or applications" as noted at the ICSA website: `lhttps://www.icsa.org/awards/outsta nding-young-research-award/`.

Eligibility: Nominees must be ICSA members for at least the past year. Eligible nominees should have obtained their PhD degree or an equivalent degree in the past six years. For example, an individual eligible for 2023 must have received a doctoral degree dated 2018 or later.

Nomination Process: Nominator is responsible for preparing a complete package for the nominee that should contain the following 1) nominee's most recent curriculum vitae; and 2) cover letter from the nominator summarizing the nominee's achievement in statistical research and/or applications. Additional nomination materials such as recommendation letters are encouraged but not required. Send the nomination materials to Award Committee Chair, Zhigang Li, via email to `zhigang.li@ufl.edu` with the subject entitled "Outstanding Young Researcher Award Nomination". Nomination items can be sent as pdf, ps or plain text attachments.

Deadline: The deadline for nomination is March 1, 2024.

Outstanding Service Award

The ICSA Outstanding Service Award is presented to individual(s) "In recognition of the individual's dedicated effort, unselfish support, and outstanding service to the association", as noted at the ICSA website: `https://www.icsa.org/awards/outstanding-service-awards/`.

Eligibility: Nominees must be ICSA members with good standing, being a member of ICSA for at least the past three consecutive years. Members of the Award Committee and the Executive Committee are not eligible to receive the award during the term of service.

Nomination Process: Nominator is responsible for preparing a complete package for the nominee that should contain the following 1) nominee's most recent curriculum vitae; and 2) cover letter from the nominator summarizing the nominee's service to the association. Additional nomination materials such as recommendation letters are encouraged but not required. Send the nomination materials to Award Committee Chair, Zhigang Li, via email to `zhigang.li@ufl.edu` with the subject entitled "Outstanding Service Award Nomination". Nomination items can be sent as pdf, ps or plain text attachments.

Deadline: The deadline for nomination is March 1, 2024.

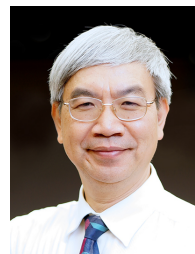# News from the ICSA-Taiwan Chapter

Henry Horng-Shing Lu

We have co-organized the "2023 International Conference for Statistics and Data Science" during July 12-13, 2023 It was held in Academia Sinica, Taipei, Taiwan. More details could be found at `https://www3.stat.sinica.edu.tw/2023icsds/index.html`.

This conference has hosted 4 keynote speakers, 60 speakers, 22 chairs, 258 attendants in 18 parallel sessions that included the Special Memorial Session to Celebrate Life of Professor Tze Leung Lai.

Scholars have shared their state-of-the-art results and research experiences with attendants that are composed of professional experts and students related to statistics and data science in a friendly and stimulating environment.

Based on the experience of this year, we are planning for the "2024 International Conference for Statistics and Data Science" which will be held on July 9-10, 2024, in National Chengchi University, Taipei, Taiwan.

Henry Horng-Shing Lu, PhD,
Distinguished Professor,
Institute of Statistics,
National Yang Ming Chiao Tung
University,
Hsinchu, Taiwan.

News from the ICSA-Canada Chapter

Joan Hu and Leilei Zeng

The ICSA-Canada Chapter CALL FOR CON-TRIBUTED TALKS at the Sixth ICSA-Canada Chapter Symposium (June 7-9, 2024, Niagara Falls) Contributed sessions for the Sixth ICSA-Canada

Chapter Symposium, 2024, Niagara Falls encompass oral and poster presentations. If you wish to be a part of this esteemed event, please submit your abstract to the Program Committee; see below for corresponding email addresses. The submission window will remain open until all available slots are filled. The Program Committee will review all submissions to determine their suitable placement withinthe program. More details could be found at `http s://icsa-canada-chapter.org/symposium2024/`.

Types of contributed sessions available for submission:

- Oral presentations: There is one session of oral presentations. It will accommodate seven participants, with each presenter allocated 15 minutes (including the Q & A session). To submit your abstract, simply send it to Dr. Zhiyang Zhou at zhou67@uwm.edu.

- Poster presentations: To submit your abstract, simply send it to Dr. Zihang Lu at `zihang.lu@queensu.ca.`

Note: Should you have an interest in serving as a chair, kindly indicate this preference during the abstract submission phase.

The keynote speakers of the Symposium are

- Annie Qu, Chancellor's Professor, University of California-Irvine

- Grace Y. Yi, Canada Research Chair in Data Science, Western University

Joan Hu, PhD,
Chair, ICSA Canada Chapter,
Professor of Statistics,
Department of Statistics and Actuarial Science,
Simon Fraser University, Canada.

Leilei Zeng , PhD,
Secretary/Treasurer, ICSA Canada Chapter,
Department of Statistics and Actuarial Science,
University of Waterloo, Canada.

Report From Outreach and Engagement (O&E) Committee

Jin Zhou, Dehan Kong and Linbo Wang

On behalf of the committee, Jin Zhou (jin-jinzhou@ucla.edu), along with Jun Zhao (njzhao@gmail.com), Weining Shen (wein-ings@uci.edu), Gang Li (vli@ucla.edu), Cheng-sheng Jiang (Chengsheng.jiang@gmail.com), Ming Wang (mxw827@case.edu), Grace Li (li_ying_grace@lilly.com), and Qing Yang (qing.yang@duke.edu), reports the following:

The ICSA Outreach and Engagement Committee

The ICSA Outreach and Engagement Committee has initiated a new journey on social media. Since our first tweet in April 2023, we've gained 463 followers and made over 500 posts. We're actively sharing conference details, calls for proposals, awards news, personal stories, and journal information, and we're exploring potential paid advertisements to reach a broader audience, including ICSA members and the statistical community.

We collaborate with other major event commit-

tees to promote ICSA's key events, such as the annual banquet at the 2023 Joint Statistical Meetings.

Looking ahead to 2024, stay tuned for the ICSA Webinar Series, led by Dr. Qing Yang, Associate Research Professor in the School of Nursing School of Nursing at Duke University. The webinar subcommittee is planning a series of webinars on topics ranging from career development to cutting-edge statistical methodologies.

Jin Zhou, PhD, ICSA Outreach and Engagement (O&E) Committee Chair.

ICSA Annual Banquet at 2023 JSM

ICSA Annual Banquet at 2023 JSM, The ICSA hosted the Annual Banquet at the 2023 JSM in Toronto, Canada. The event took place at the locally renowned Dim Sum King Seafood Restaurant (翠濠庭海鮮酒家) after the membership meeting on August 9, 2023. Approximately 100 attendees walked to the conveniently located downtown venue. The restaurant offered a fixed-price twelve-course meal, including wine and soft drinks, for groups of ten at each table. The feast featured an array of delicacies such as a roasted suckling pig platter, shark fin soup, stuffed prawn, scallops, abalone, lobster, steamed fish, and an assortment of vegetables, rice, and noodles. Pricing for the meal was set at 80 Canadian dollars for adults, with 50% discounts for children aged 5 to 11, and complimentary dining for children under 5. Ticket sale was used to cover meals, taxes, and tips. Every participant was given a lottery ticket upon arrival. Throughout the

course of the banquet, ICSA officials conducted a draw to select 25 lucky tickets, each carrying a prize of 20 USD Amazon gift card. Amidst the festivities, speeches were delivered by ICSA President Gang Li and American Statistical Association President-elect Ji-Hyun Lee.

Planning of the banquet received a full support from the ICSA officers Gang Li, Zhezhen Jin, Jun Zhao, Grace Li, Chengsheng Jiang, and Jin Zhou. Special acknowledgment goes to graduate students at the University of Toronto for their great volunteering work.

Dehan Kong, PhD and Linbo Wang, PhD, 2023 JSM Local Co-Chairs, ICSA

Jin Zhou, PhD,
Associate Professor,
Department of Medicine,
UCLA, USA.
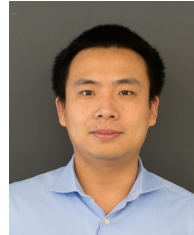
Dehan Kong, PhD,
Associate Professor,
Department of Statistical Sciences,
University of Toronto, Canada.

Linbo Wang, PhD,
Assistant Professor,
Department of Statistical Sciences,
University of Toronto, Canada.

Report from the ICSA Springer Book Series in Statistics

Ding-Geng Chen

ICSA Book Series in Statistics (ISSN:2199-0980) was established in the year 2012 between ICSA and Springer. The editor of ICSA Springer book series in statistics, Dr. Ding-Geng Chen, has reported

that there are 26 books in the series now. One new book was published in 2023 and one to be published in 2024 with details below. If you plan to write books, please contact Professor Ding-Geng Chen at `dinchen@email.unc.edu` for your interest.

- 2023: Statistical Inference Under Mixture Models (Authors: Jiahua Chen, `https://link.springer.com/book/10.1007/978-981-99-6141-2`)
- 2024: Statistics in Precision Health: Theory, Methods and Applications (Editors: Yichuan Zhao and Ding-Geng Chen, `https://link.springer.com/book/9783031506895`)

Ding-Geng Chen , PhD,
ASA Fellow,
Executive Director and Professor
in Biostatistics,
College of Health Solutions,
Arizona State University,
Phoenix, AZ , USA.

Report from Statistica Sinica Co-Editors

Rong Chen, Su-Yun Huang, and Xiaotong Shen

In 2022, Statistica Sinica receives 384 original submissions (revised papers not included). The total number of original submissions is a little lower than that in 2021. About 14% of the papers submitted in 2022 have not yet reached their final results. Acceptance rates are reported below. Currently we have a huge backlog of accepted papers. Up to 2023.7.6, there are 167 accepted papers in the backlog (scheduled to be published in Vol.33 No.4 - Vol.35 No.3), including 7 papers for special issue "Sequential Monte Carlo method," and 3 papers for special issue "Data Privacy". Vol.33 No.4 will be published in October this year, and Vol.35 No.3 will be published in July, 2025. All accepted papers are posted online immediately after acceptance.

The journal's two-year impact factor in 2022 reaches up to 1.4, which is higher than that in 2021 (1.330). Its five-year IF in 2022 is 1.4, which is a little lower than that in 2021 (1.481). For the past year, the number of average days from acceptance to publication is 379 days.

1. Submissions and Acceptance Statistics

Table 1 shows the number of submissions and the acceptance rates from 2018 to 2022. Table 2 shows the number of submissions by country from 2020 to 2022.

Table 1. Number of Submissions and Acceptance Rate from 2018 to 2022

	Jan 1, 2018 – Dec 31, 2018	Jan 1, 2019 – Dec 31, 2019	Jan 1, 2020 – Dec 31, 2020	Jan 1, 2021 – Dec 31, 2021	Jan 1, 2022 – Dec 31, 2022
Accept	82	87	112	119	100
Number of Submission	437	415	437	413	384
Acceptance rate	18.7%	20.9%	25.6%	28.8%	26+ %

*About 14% of the papers submitted in 2022 haven't reached their final results.

Table 2. Top ten countries with the highest submissions from 2020 to 2022

| Rank	Jan 1, 2020– Dec 31, 2020		Jan 1, 2021– Dec 31, 2021		Jan 1, 2022– Dec 31, 2022	
1	USA	196 (33.3%)	USA	216 (35%)	China	203 (34.2%)
2	China	169 (28.7%)	China	168 (27.1%)	USA	191 (32.3%)
3	Hong Kong	21 (3.6%)	Canada	36 (5.8%)	Taiwan	27 (4.6%)
4	Canada	15 (2.5%)	Hong Kong	28 (4.5%)	Canada	25 (4.2%)
5	Japan/ United Kingdom	14 (2.4%)	Taiwan	21 (3.4%)	Hong Kong	20 (3.4%)
6	Taiwan	13 (2.2%)	Italy	16 (2.6%)	Japan	15 (2.5%)
7	Australia/ Singapore	11 (1.9%)	Japan	10 (1.6%)	Australia	11 (1.9%)
8	Iran	10 (1.7%)	Australia/ Brazil/ United Kingdom	9 (1.5%)	Italy	10 (1.7%)
9	Pakistan	9 (1.5%)	Germany/ Singapore	8 (1.3%)	United Kingdom	9 (1.5%)
10	Germany/ India/ Italy/ Korea/ Turkey	8 (1.4%)	India/ Iran/ Pakistan	7 (1.1%)	Kenya	8 (1.4%)

2. Manuscript Processing Time

Table 3 shows the turnaround statistics of initial decisions from 2020 to 2022, with the decision times censored on July 6, 2023. About 50% of the editorial decisions during 2022 take less than 61.5 days, but 5% take over 201 days. From 2020 to 2022, the average reviewing time ranges from 51 days to 70 days. From table 4, it can be seen that a large percentage of papers get the reviewing decisions within 30 days.

Table 3. Percentiles of review time in days from 2020 to 2022

Period	5th	25th	50th	75th	95th	Sample Size	Average Review Days
Jan 2020 – Dec 2020	4	11	34	93	154.3	479	58
Jan 2021 – Dec 2021	5	9.75	25	79	142.6	428	51
Jan 2022 – Dec 2022	3	9	61.5	105	201	392	70

Table 4. Comparison of review time in days from 2020 to 2022 (with 30 days group)

Jan 2020 – Dec 2020 | Jan 2021 – Dec 2021

Jan 2022 – Dec 2022
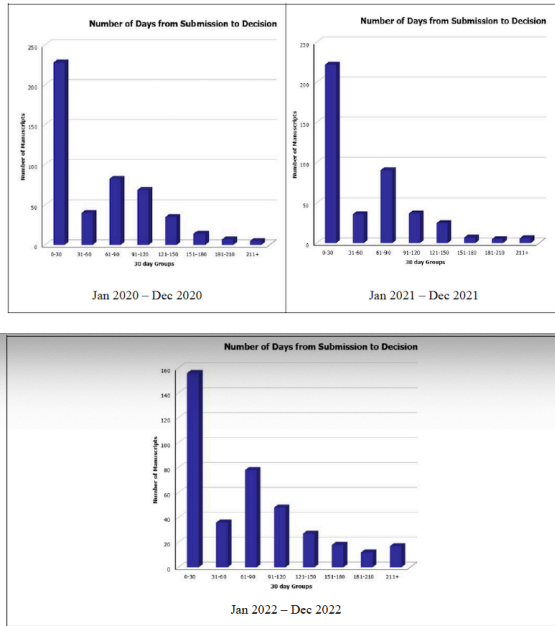
3. Rankings and Impact Factors

Table 5 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 2013 to 2022. Table 6 shows the ranks of Statistica Sinica in Scimago Journal Rankings among all journals of Statistics and Probability in the Scopus database from 2013-2022. The ranking is performed using the algorithm Google PageRank.

Table 5. JCR rankings for the recent 10 years.

Year	Number of Journals	Ranking (2-Year Impact Factor)		Ranking (5-Year Impact Factor)	
2022	125	66	(1.4)	69	(1.4)
2021	125	78	(1.330)	70	(1.481)
2020	125	76	(1.261)	64	(1.647)
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)

Table 6. SCImago journal rankings for the recent 10 years.

Year	Total Number of Journal	Journal Rank	Quartile
2022	258	42	Q1
2021	250	45	Q1
2020	257	50	Q1
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

4. Special Issues

In the past year, we have published four regular issues and two online special issues (In Honor of Professor Ker-Chau Li & High-Dimensional Statistics) containing 133 articles in total. Currently, we are organizing three special issues: "Sequential Monte Carlo method", "Data Privacy," and "Network Data Analysis". Totally, 32 papers had been submitted for these three special issues, and some of them are still under reviewing process. All these three special issues will be published as online-only issues.
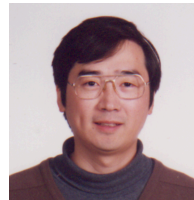
Rong Chen, PhD,
Distinguished Professor and Chair,
Department of Statistics,
Rutgers University, NJ, USA.

Huang, Su-Yun, PhD,
Research Fellow,
Institute of Statistical Science,
Academia Sinica, Taiwan.

Xiaotong T. Shen, PhD,
Distinguished Professor,
School of Statistics,
University of Minnesota, MN, USA.

Report from Statistics in Biosciences (SIBS)

Hongkai Ji and Jianguo(Tony) Sun

Statistics in Biosciences (SIBS) is one of the two statistical journals established by ICSA. It publishes articles on the 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. The journal has three issues each year, consisting of regular articles as well as topic-oriented papers in special issues. See more information on the journal's website, `https://www.springer.com/journal/12561`.

In 2023, the journal published 35 articles in two regular issues and one special issue on "Machine Learning Algorithms in Genomics and Genetics" guest edited by Dr. Yingying Wei. We have also received the journal's first impact factor of 1.0, announced by Clarivate Analytics in the Journal Citation Reports (JCR).

SIBS currently has three special issues in preparation for publication:

- "Novel Statistical Approaches for Modeling Exposure Mixtures and Health Outcomes" (Guest-editors: Zhen Chen and Paul Albert, NIH).

- "Machine Learning in Biomedical Sciences" (Guest-editors: Dehan Kong, University of Toronto, and Bingxin Zhao, University of Pennsylvania).

- "Statistical Methods, Algorithms and Applications in Biomedical Data Integration" (Guest-editors: Peter X.-K. Song, University of Michigan, and Lu Tang, University of Pittsburgh).

We welcome proposals of new special issues for SIBS from ICSA members and friends.

SIBS publishes articles in four sections including Original Articles, Case Studies and Practice Articles, Review Articles, and Commentaries. We are pleased to announce that the journal now welcomes manuscripts that describe new software tools and broadly useful computational and data resources under the category of Case Studies and Practice Articles. Examples include but are not limited to carefully curated high-quality datasets and computational pipelines that can be used to benchmark statistical and computational methods, and extensively tested, scalable, robust and well-documented software for analyzing data from high-throughput technologies.

On December 31, 2023, Dr. Joan Hu has stepped down from the Editor-in-Chief position after finishing three years of service to the journal. We would like to express our deepest gratitude to Dr. Hu for her great leadership and selfless service to the journal which have been a key to the journal's improving author experience and increasing impact. We are pleased to announce that Dr. (Tony) Jianguo Sun has been appointed by ICSA as the new co-Editor-in-Chief, effective on January 1, 2024.

Our new co-editor team would like to take this opportunity to thank all of our authors, reviewers, readers and editorial board members for your great contribution and continuous support to the journal! We look forward to closely working with all of you to publish more impactful research in 2024.

Hongkai Ji, PhD,
Professor,
Department of Biostatistics,
*Johns Hopkins Bloomberg School of Public Health, USA.*

Jianguo (Tony) Sun, PhD,
Professor and Director,
Department of Statistics,
University of Missouri. USA.

ICSA Financial Report

Profit and Loss: July 1, 2023 through December 31, 2023.

Beginning Cash Balance (Bank/Symposium/Paypal accounts)	7/1/2023	$	772,077.14
Income:			
Membership		$	19,760.00
2023 Donations		$	21,000.00
2023 JSM Banquest Registration		$	5,311.85
Springer Science & Taylor Franc		$	3,818.63
Job Posting		$	882.00
Interest		$	74.38
Total Income		$	50,846.86
Expense:		$	**(149,231.75)**
ICSA Office Cost		$	(19,964.38)
2023 ICSA Symposium Awards and Honorarium		$	(2,750.00)
2023 Research, Scholar Awards		$	(6,000.00)
2023 Conferences' Keynote Speakers		$	(8,000.00)
2023 JSM Events		$	(9,080.74)
Wire to 2023 International		$	(50,968.47)
Wire to 2023 China -Xinan Jiaotong		$	(40,833.77)
2024 Symposium Seed Fund		$	(5,000.00)
IT Cost		$	(5,910.53)
Paypal and Bank Fee		$	(723.86)
Total Expense		$	**(149,231.75)**
Net Total Income		$	**(98,384.89)**
Transfer to Vanguard		$	(200,000.00)
Fee adjustment		$	510.00
Ending Cash Balance (Bank/Symposium/Paypal accounts)	12/31/2023	$	474,202.25
ASSETS			
JPHsu Investment		$	26,963.19
Bank/PayPal		$	474,202.25
Vanguard Investment Balance		$	1,228,448.37
TOTAL ASSETS			**$ 1,729,613.81**
LIABILITIES & EQUITY			
Equity			
Main Accounts Opening Balance July 1, 2023		$	717,921.56
July 1 to Dec 31, 2023 Net Income(+)/Expense(-)		$	*(1,072.65)*
To 2024 Applied Symposium Account		$	*(5,000.00)*
To 2023 International Conference Account		$	*(50,968.47)*
To 2023 China Conference Account		$	*(40,833.77)*
To Vanguard Account		$	*(200,000.00)*
2018 Symposium Bank Accounts Opening Balance July 1, 2023		$	*4,700.00*
July 1 to Dec 31, 2023 Net Income(+)/Expense(-)		$	*-*
2023 International July 1, 2023		$	*47,409.80*
July 1 to Dec 31, 2023 Net Income(+)/Expense(-)		$	*2,045.78*
For JP Hsu Account Openning July 1, 2023		$	*25,057.71*
July 1 to Dec 31, 2023 Net Income(+)/Expense(-)		$	*1,905.48*
Vanguard investment account opening balance on July 1, 2023		$	962,887.13
Transfer from Main Account		$	*200,000.00*
July 1 to Dec 31, 2023 Investment Profit(+)/Loss(-)		$	*65,561.24*
Total Equity			**$ 1,729,613.81**
TOTAL LIABILITIES & EQUITY			**$ 1,729,613.81**
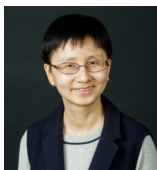
Rui Feng, PhD,
Treasurer, ICSA,
Associate Professor of Biostatistics,
University of Pennsylvania.

XL-Files: Tenure by GPT-n – Make it or Fake it

Xiao-Li Meng

Since my first encounter with it in March, ChatGPT, along with its many emerging siblings and cousins (some out of wedlock), has rapidly evolved into a "promptbot," by which I'm not referring only to the way chatbots have given rise to the concept of "prompt engineering". More broadly, they have prompted a whole spectrum of actions, from the outright banning and panning of their uses to intensely exploring and exploiting their potential. History has shown that humanity has rarely (ever?) resisted the allure of our technological achievements. Banning technology is about as effective as telling a teenager not to watch an R-rated movie. The only way to suppress a technology that has already piqued the public interest is to introduce a better one: rather than fearing it, steering it in the right direction, first studying its boons and dooms.

I therefore was delighted when my fearless and tireless colleague, Lucas Janson, initiated a summer reading group on studying the impact of generative AI on the field and practice of statistics. Of course, a summer is too short to study everything, and hence after some venting and voting, we settled on the following weekly schedule:

7 & 14 June Overview: Model principles of generative AI
21 June Overview: What's out there?
28 June Overview: Prompt engineering
5 July Assistive tool: Writing code
12 July Assistive tool: Writing text
19 July Assistive tool: Making visualizations
26 July Speculative tool: Searching academic literature
2 August Assistive tool: Cautions/pitfalls
9 August (No meeting: JSM)
16 August Research topics: Model interpretation
23 August Research topics: Calibrating uncertainty

Except for the first two sessions, which were led by a faculty member and two students, each topic was covered by a team of two students, or by a student–faculty pair. I joined the one on "What's out there?", partly because of my access to the diverse editorial board of Harvard Data Science Review (HDSR), which is in the midst of organizing a special issue on "Future Shock: Grappling With the Generative AI Revolution." (This is the first open call from HDSR, so please don't miss the opportunity to submit: `https://hdsr.mitpress.mit.edu/`). Thanks to the superb human intelligence provided by PhD student Ritwik Bhaduri, we ended up with nearly 50 dense slides, covering eight functionalities, as summarized in the opening slide:

Eight functionalities of AI: text generation; code and algorithm generation; sentiment analysis; AI in medicine; image generation; music generation; and voice synthesis

We began with text and code generation because they are essential tools for those diligently working toward their academic degrees or tenure, as well as for those of us who have not found a lifestyle more satisfying than generating texts with strategically embedded Greek letters. The versatility of generative AI shines through its wide range of functions and adaptability within each function. For instance, with just text generation, GPT-4 can create, capsulize, condense, compare, contrast, and critique content. And as technological advancements continue, we can anticipate even more capabilities, especially with a plethora of plugins regularly emerging.

We highlighted the sentiment analysis to show how generative AI can be employed to produce research data before generating text or code. We cited a study on how GPT-4 can classify the sentiment of news headlines—positive, negative, or neutral—to predict stock market trends for the following day. Predictions are inherently risky. However, it's a safe bet that for sentiment analysis, generative AI will surpass and replace many human "classifiers". Envisioning GPT-n as a superlative "wisdom of the crowd"would not be a hallucination, especially as n grows. After all, GPT-n is trained on a vast amount of data that surpasses what any group of humans can handle (without the help of generative AI). If our collective sentiments sway the stock market, it's more logical to trust a massive synthesizer like Chat-

GPT over individual human judgment. This isn't to claim that AI surpasses human intelligence. It 's merely a nod to two facets of human intelligence: the collective wisdom of humanity and the unique intellect of individuals. ChatGPT essentially grants individuals unprecedented access to a digitized form —however incomplete or biased—of our collective knowledge, available nearly anytime and anywhere.

There's a well-known Chinese saying, "三个臭皮匠赛过诸葛亮". While a pun-preserving translation is virtually impossible, GPT-4 offers a poetic rendition: "In unity of three craftsmen's thought, a sage's wisdom is forth brought."I'm fond of the term "unity," as it encapsulates generative AI's cohesive wisdom synergy, contrasting human attempts at consensus. How often do we see a group of expert – say 30 (much less 30 million) – come to a unanimous decision quickly, or at all? This synthesized intelligence, while efficient, may at times lack the depth of diverse human perspectives. But the value of swift consensus can't be understated, especially when human biases, self-interests, or egos obstruct decision-making. Even in an ideal world driven solely by the greater good, promptly gathering and synergizing insights from a large group of experts remains a dream (or nightmare).

The time-saving advantage of using ChatGPT is undeniable, especially for those intrigued by countless challenges in data science. While churning out more articles shouldn't be the sole aim of (academic) research, very few institutions would grant tenure based on a small number of high-quality publications. It's thus a reasonable prediction that the volume of academic articles will surge alongside the progression of GPT-n.

Is the overall quality of research articles also on an upward trajectory? That's a vastly more challenging hypothesis to test, especially since assessing quality necessitates its own set of comprehensive research. One would hope that as quantity increases, quality doesn't proportionately decrease. But that might remain merely a hope.

Consider the need to search for and summarize literature in preparing research articles, a task for which ChatGPT is known to hallucinate at times. To see how much progress GPT-4 has made over GPT-3.5, I prompted both with the same request: "Provide some representative articles by Xiao-Li Meng" (on Aug 20, 2023). GPT 3.5 came back with a list of five. The first four were accurate, but the last one,

"Gelfand, A. E., & Meng, X.-L. (1990). Model choice in generalised linear models via noninformative priors. Biometrika, 77(2), 249–261"

...is a complete fabrication. I never had the opportunity to co-author with Alan Gelfand. The article title doesn't exist (nor would it be adopted by any reputable statistician). Furthermore, the page range provided in 1990's Biometrika straddles two completely unrelated articles.

Nevertheless, compared to a similar test I conducted in March, GPT-3.5 has shown notable progress. Back then, all four articles it provided were fictional. Worse still, the four titles appeared plausible or even credible, which is perilous since apparent authenticity demands discernment to identify false references. Although verifying a reference's legitimacy is typically straightforward (for those who at least glance at what they cite), when ChatGPT is employed to explore unfamiliar territories, the risk to research quality magnifies. Fictitious information, if unchecked, can become fodder for future AI training, perpetuating inaccuracies, and ultimately, like repeated lies, creating an illusion of truth.

While GPT-3.5's performance in August outshone its earlier version, the optimism was short-lived. GPT-4 responded to the same prompt with six articles, mis-attributing four of them. Two of these errors amusingly reassigned my co-authors, with a Harvard classmate (Andrew Gelman) replaced with a Chicago colleague (Wing Wong), and a Chicago advisee (David van Dyk) with my Harvard adviser (Donald Rubin). Another amusing misrepresentation,

"Multiple Imputation in Practice: Comparison of Software Packages for Regression Models With Missing Values. Meng, X.-L., Rubin, D. B. (1992). The American Statistician, 45(3), 186–202"

...is a genuine title from The American Statistician but was published two decades later by Horton and Lipsitz (2012, Vol 55, 244–254). Although my PhD advisor Don Rubin and I are known to be "multiple imputers"(thankfully Don didn't venture into "serial imputation"), the term "software" appeared once in Don's extensive list of article titles, and not at all in my publications. This fact should significantly diminish the likelihood that either of us would publish an article on "comparison of software packages."However, when an AI learns patterns primarily through exhaustive training, its ability to discern what shouldn't be there—such as the absence of certain topics in our publications—depends on its training on what is missing, a negation learning that seems to be beyond GPT-4's current capabilities.

In general, GPT-4 is widely recognized as a leap

forward from GPT-3.5. In this context, however, the term "forward" would be apt only if I were tempted to pad my list of publications through "multiple imputations."Of course, such a notion should not even cross anyone's mind. However, my playful experiment is not without a serious message. As tools like ChatGPT become more pervasive, the risk of erroneous outcomes, whether unintentional or malicious, is likely to accelerate, notwithstanding technological advancements. While this isn't cause for panic, it should compel us to approach information with heightened scrutiny, filtering it through our critical thinking and discernment. If a significant number of human beings make this a habit, our collective wisdom as a species might just grow. Such progress would truly be a testament to the potential of humanity—after all, the primary goal of AI is not to supplant, but to amplify human intelligence on both collective and individual scales.

Lastly, lest anyone assumes I've been infected by ChatGPT's penchant for hallucinations, let me share the ChatGPT-3.5 poem I promised in my April/May XL-Files. It serves as a reminder that our profession could benefit from a dose of GPT's imaginative flair, especially the kind that nudges us out of our usual boundaries:

> *"All data has [sic] stories, some mistold*
> *Messy facts, some can unfold*
> *All models simplify, some more sound*
> *Fallible assumptions, some more profound*
> *Methods serve, some versatile*
> *Interpretations, some contrived, some worthwhile"*

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

Statistical Innovation in Pharmaceuticals: Observations from the Inaugural Community Summit and Beyond

Chenguang Wang and Satrajit Roychoudhury

Editorial: The inaugural Statistical Innovation Community Summit sucessfully took place on Nov 9th 2023, in Tarrytown, New York. The workshop was co-organized by the ASA NYC Chapter and Regeneron, and hosted by Regeneron. It attracts more than 150 participants from over 20 companies, academia, and the FDA for a lively discussion on practical, regulatory, and organizational challenges and opportunities while implementing statistical innovations in pharmaceutical industry and research. As organizers for this event, Dr. Wang from Regeneron and Dr. Roychoudhury from Pfizer wrote this article to share their experiences and thoughts.

Innovation has been essential for statisticians in accelerating the development of new medical products for patients. The impact of statistical innovation is widely recognized by regulatory agencies and the industry alike. This recognition includes the development of strong theoretical foundations, the facilitation of efficient implementation in real life studies, and collaboration with different stakeholders. In recent years, statistical innovation has become an integral part of the medical product development. This integration is further supported by several initiatives from policymakers, including but not limited to the 21st Century Cures Act, the Complex Innovative Trial Design (CID) Paired Meeting Program, the EMA's Innovation Task Force, and the EU Innovation Network. To address this need, many companies have established dedicated statistical innovation or methodology groups within their statistics departments.

The responsibilities of such statistical innova-

tion groups can vary substantially between different companies, depending on the vision of the organization's leaders. The day-to-day work may involve evaluating the potential strength and weaknesses of a new method, finding a balance between practicality and novelty, educating peers on a new method, and persuading regulatory agencies of the acceptability of an innovative method in a specific context. There are also complex operational challenges, including securing dedicated resources for successful implementation in clinical developments and decision-making boards.

When a statistician chooses an industry career in a methodological group, there are many open questions that must be answered. Some common questions include:

(i) What should the career path be?

(ii) How can short-term and long-term career growth be ensured?

(iii) How can they influence decisions about statistical design and analysis without being core members of the product team?

(iv) How will their accomplishments be recognized within their organization and the larger statistics field?

Answers to these questions could effectively enhance stat innovation. This can ultimately lead to stagnation and a lack of progress. At the Regulatory-Industry Statistics Workshop 2023, a distinguished panel of leaders from pharmaceutical companies and the FDA (Jeen Liu, Claude Petit, John Scott, Shanthi Sethuraman, Zhenming Shun, Sammi Tang) shared their insights. They outlined their visions on how statistical innovation efforts can be more seamlessly incorporated into the crucial roles of statisticians in medical product development. This dialogue was continued at the Inaugural Statistical Innovation Community Summit. Co-organized by the New York City Metropolitan Area Chapter of the ASA and Regeneron, the summit was hosted by Regeneron on November 9th in the charming town of Tarrytown, NY.

Statisticians from the FDA, academia, and more than 20 pharmaceutical companies came together to discuss how statistical innovation efforts can optimally enhance medical product development. A wide range of distinguished speakers and panelists shared their insights and knowledge on various core topics. These include the regulatory qualification process for innovative statistical approaches, the role of statistical innovation groups in different organizations, the best strategies for disseminating statistical innovative methods to meet business and regulatory requirements, and the career path for a statistical innovator. Guided by the theme "From Applying Innovation to Building an Innovative Culture," participants acquired valuable insights into not only transforming innovative ideas into operational strategies but also fostering an innovative environment that stimulates creative efforts.

Organizing an inaugural event is always a challenging endeavor, yet the statistical innovation community's enthusiasm, energy, and sophistication

throughout the process left us thoroughly impressed. The summit's success was a testament to the unwavering dedication of our organizing committee. This included Cynthia Scherer, May Mo, Elena Polverejan, Kentaro Takeda, Xiaolong (Ron) Yu, Jinglin Zhong, Jose Ma. Alvir, and Marcia Levenstein. We were also privileged to have distinguished keynote speakers such as John Scott, Jose Pinheiro, Ying Yuan, and Neal Thomas, who shared their invaluable insights and experiences. Esteemed speakers and panelists, including Fang Liu, Haoda Fu, Binbing Yu, Inna Perevozskaya, Jian Zhu, Li Wang, Jiawen Zhu, David Ohlssen, Yongming Qu, Demissie Alemayehu, Olga Marchenko, Lei Nie, Claude Petit, and Ram Tiwari, further enriched the event with their expertise. Lastly, the unwavering support from the Regeneron leadership team, including Jeen Liu, Bret Musser, and Ned Braunstein, played a pivotal role in the event's success.

While the statistical innovation community may be relatively small, its voice resonated powerfully at the summit. The pharmaceutical field is in dire need of dedicated innovation groups. The traditional model, which relied on "part-time" innovators, is often not adequate for addressing the need for complex and innovative designs, adopting cutting-edge technologies like large language models, and applying statistical thinking to the comprehensive medicine development process. Conversely, statistical innovation groups must foster partnerships with nearly all functional teams within the pharmaceutical industry. They cannot remain as research groups primarily focused on methodology development. Instead, they must comprehend the business needs, be ready to deliver business value, and be assessed based on the business value they provide. This distinct approach sets them apart from academic research groups.

The statistical innovation community requires acknowledgment from both the statistical field and pharmaceutical organizations. This recognition is crucial for the development of suitable training programs, the cultivation of graduates with the necessary skill sets, and the identification of appropriate career paths for this community's members. With these elements in place, the statistical community can thrive and become as integral to the medicine development process as data management, programming, and biostatistics, which are the current three cornerstones of statistics organizations in pharmaceuticals. We believe that the Inaugural Statistical Community Summit was a step towards gaining this recognition, and we are committed to perpetuating the summit, transforming it into an annual event, and making it the hub for the statistical innovation community.
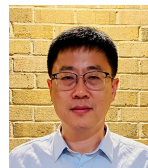
Chenguang Wang, Ph.D.
Senior Driector,
Regeneron.

Satrajit Roychoudhury, Ph.D.
Executive Director,
Pfizer.

American Statistical Association Statistical Partnerships Among Academe, Industry, and Government Committee Hosts Webinar on Industry and Government Internships

Michelle Shardell, Scott Goldie, Emily Morris, Paul Albert, Wei Shen

On December 7th , 2023, the American Statistical Association Statistical Partnerships Among Academe, Industry, and Government (SPAIG) Committee hosted a webinar on industry and government internship opportunities for students in statistics, biostatistics, data science, and related fields (`https://community.amstat.org/spaig/home`). Over 150 webinar attendees had the opportunity to listen to the panel discussion among representatives from the Food and Drug Administration (FDA), National Cancer Institute (NCI), Eli Lilly, and Pfizer. Panelists received excellent questions on multiple facets of the internship process– more questions than they had time to answer in a one-hour webinar. Notably, attendees expressed great interest in the nuances of industry and government internships for international graduate students.

Recently, SPAIG caught up with Scott Goldie, Senior Regulatory Health Project Manager and Office of Biostatistics Oak Ridge Institute for Science and Education (ORISE) Internship Coordinator in the Center for Drug Evaluation and Research (CDER) at the FDA; Emily Morris, Mathematical Statistician at FDA/CDER; Paul Albert, Senior Investigator and Director of the Biostatistics Branch at the National Cancer Institute (NCI); and Wei Shen, Associate Vice President of Strategy and Capabilities in Statistics, Data and Analytics at Eli Lilly and Company, to learn more about internships for international students at their organizations.

Interview

SPAIG: Does your organization offer internships for international applicants with F-1 or J-1 Visas?

Scott G (FDA): Yes. However, F-1 students with post-completion Optional Practical Training are only eligible to participate during the initial 12-month period.

Paul A (NCI): At NCI, the summer internship program (SIP) requires U.S. citizenship or permanent residence status. Other fellowships such as pre-doc or post-doc fellows are open to foreign nationals.

Wei S (Eli Lilly): Yes, the summer internship program at Eli Lilly accepts applicants with F-1 or J-1 visas.

SPAIG: What extra steps should international students take to apply for a successful internship?

Scott G (FDA): Due to requirements for issuance of an official FDA identification card, individuals selected for participation in CDER's ORISE program must be able to successfully pass a tier 1 background investigation for the Federal Government. To do so, participants must have maintained residence in the United States for a minimum of 36 of the past 60 months as of the date of their application. Travel to designated FDA sites may be required as part of student's background investigation. Students also need to check with their school's international advisor regarding any university requirements and timelines for applying for the proper work authorization (e.g. Curricular Practical Training [CPT] or Optional Practical Training [OPT]).

Wei S (Eli Lilly): Students should check with the graduate program's requirements for their CPT application.

SPAIG: Does an international student have to apply to CPT then apply for the internship?

Michelle Shardell
University of
Maryland School
of Medicine

Scott Goldie
Senior
Regulatory
Health Project
Manager, FDA

Emily Morris
Mathematical
Statistician,
FDA

Paul Albert
Senior
Investigator and
Director, NCI

Wei Shen
Associate Vice
President at Eli
Lilly and
Company

Scott G (FDA): Most students need an offer letter to apply for CPT. The offer letter comes after the selection process.

Wei S (Eli Lilly): F-1 students should check with their Designated School Official (DSO) or Alternate Responsible Officer (ARO) for their university's Curricular Practical Training (CPT) or Optional Practical Training (OPT) application and policies. Likewise, J-1 Students should seek out their DSO or ARO to inquire about J-1 Academic Training.

SPAIG: Do all internships require applicants to have stayed in the United States for 36 months out of past 60 months?

Scott G (FDA): At FDA - yes - this is not negotiable. Other government internships may have different requirements.

Paul A (NCI): Not for pre- or post-docs.

Wei S (Eli Lilly): No requirements from Lilly. For international students, they must have a valid F-1 or J-1 visa, which may require residency in the United States during the academic year.

SPAIG: For previous interns, what was the most rewarding part of the internship? What was the most challenging part? How did you overcome this challenge?

Emily M (FDA): I would say the most rewarding part of the internship was getting to contribute to a research project that had the potential to impact regulatory decision making. One of the challenges is the limited amount of time and length of the internship. To overcome this, it's helpful if the project is narrow in scope so that there is enough time to thoroughly address the topic of interest.

Wei S (Eli Lilly): For both international and non-international students, the internship provided valuable insight into the role of a statistician in the pharmaceutical industry, work culture and dynamics in private industry, and the dynamic career paths available for a statistician. Some challenges faced by interns include developing effective communication with other statisticians and non-statisticians, developing business acumen to understand what motivates the problem at hand, and understanding how the team/project influences drug development. These challenges are overcome through immersion in the internship, frequent engagement with other non-supervisory statisticians and non-statisticians, and making an active effort to see the bigger picture.

SPAIG: Where can interested applicants go to find more information about internships for international students at your organization?

Scott G (FDA): A good source is `https://www.zintellect.com/Opportunity/Details/FDA-CDER-2024-0000`.

Paul A (NCI): Information is available at `https://www.training.nih.gov/research-training/pb/sip/`.

Wei S (Eli Lilly): Please check `www.lilly.com`.

Interested in listening to the whole webinar? You can access it from the SPAIG internship resources website(`https://www.youtube.com/watch?v=PnICVntgy9g`). Want to learn more about SPAIG activities? You can join the Friends of SPAIG email list(`https://form.jotform.com/zzlalo/friends-of-spaig`).

A Recap of an ICSA 2023 Expert Panel: Statistics and Data Science Skills in the Real World

Panelists: Joseph C. Cappelleri, Pfizer Inc, Sisi Guo, AstraZeneca, Franklin Sun, Lexicon Pharmaceuticals, Inc., Jie Tang, Calico Life Sciences LLC, and Li Wang, AbbVie.

Moderator: Kelly H. Zou, Viatris Inc

During the 2023 International Chinese Statistical Association's (ICSA) Applied Statistics Symposium, several panelists from industry candidly discussed the key elements of Statistics and Data Science skills from the campuses to the real-world in practice. They shared their journeys including key learnings and obstacles. This panel was organized by the Social Activities Committee among the symposium organizers. A few recent ICSA panels were also able to shed light on thought-leadership and career advice.

The panel was well received and had a wide appeal, given the increasing focus on both technical and soft skills. The end of this recap article also summarizes the top ten tips following the panelists' advice, which can be valuable to Statisticians and Data Scientists in diverse practice areas and career sectors.

1.What are some useful skills in quantitative disciplines?

Thomas Edison once said, "There is a way to do it better – Find it!" Steve Jobs once said, "Stay Hungry, Stay Foolish."

Among individuals engaged in quantitative and scientific disciplines, cultivating a keen sense of curiosity and an unwavering commitment to constant (self) improvement are critical. Two renowned figures have already addressed this notion adeptly.

Technical (hard) skills are necessary and must be kept sharp through continuous educational and learning opportunities. There may not be so-called "pure"statisticians since our field interacts with so many disciplines. However, in terms of the industry sector, for example, it is heavily regulated. Therefore, adapting to new knowledge and understanding compliance requirements are critical. We need to be

nimble and agile in terms of new tools. After three or four years, the classroom knowledge may be obsolete although it tends to set a solid foundation in terms of statistical thinking. We may consider keeping the habit of exploring through the latest literature.

In addition to being proficient in the general set of core subjects on data science and on mathematical and applied statistics offered by colleges as part of standard curricula for all students regardless of college major, it is useful to be proficient in specialized topics such as Bayesian statistics, categorical data analysis, computational methods, cost-effectiveness analysis, decision analysis, econometrics, longitudinal data analysis, network and text data analysis, and survey statistics.

2. Besides clinical trials and real-world data, what are some emerging trends?

Statisticians can be innovators and entrepreneurs. New trends can be data science, artificial intelligence, machine learning, deep learning, and natural language processing. In the healthcare field, in particular, new trends are drug discovery, drug development, precision medicine, health data, as well as health economics and outcomes research. Statisticians learn fast and are used to adapt to new challenges. Moreover, statisticians are also collaborators who can lead but also work together with experts of various backgrounds. The problems can be complex and multi-dimensional, but they can also be exploratory. For competitive intelligence and market research, these are areas that students may also look into, especially for those who are business-minded and hands-on.

The rapid evolving methodologies on Machine Learning/Deep learning and its applications are revolutionizing drug development across the entire spectrum. These advancements have already made a huge impact on drug discovery, manufacturing, trial design, precision medicine, patient identification and enrollment, safety monitoring, risk-based monitoring, novel endpoint development, efficacy
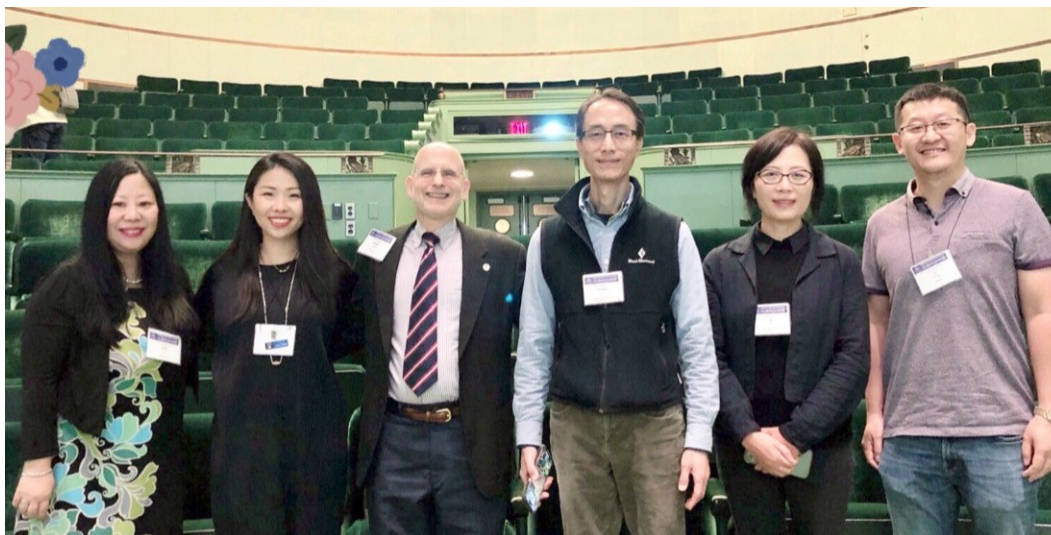
event prediction and more. They are poised to fundamentally reshape the landscape of drug development.

There are also the top 10 emerging trends in health economics and outcomes research that IS-POR, the professional society for health economics and outcomes research (HEOR), has published for 2022-2023. In varying degrees, statistical principles and reasoning are applicable to each of them: (1) real-world evidence, (2) value assessment, (3) health equity, (4) healthcare financing, (5) patient engagement, (6) drug and healthcare pricing, (7) public health, (8) health technology assessment, (9) health data, and (10) artificial intelligence.

3. How do students prepare for the industry sector beyond academic education?

First and foremost, be proactive while contemplating one's first job. For example, participate networking events to understand the types of industry opportunities and day-to-day activities if possible. If there are postdoctoral fellowship positions, PhD students may consider them first as a step towards the business world. For students who aspire to become statisticians, data scientists and informaticians, there may be broader career options in various functions that may not be specifically in these job roles. For youngsters, there are plenty of opportunities to explore and even switch career paths. For mid-career researchers in academia who would like to switch to the industry, it may be better prepared for industry roles due to methodological strengths. In addition to academic conferences,

there are certificates or industry-academic partnerships or forum.

As students, throughout your lives you have spent most of your energies in leaning. You have done everything you can to acquire knowledge and skill. Now it's time for you to reframe you mind from a learner to a contributor. Instead of trying to learn in your new job, ask yourself: "How can I contribute? What can I do to improve the project or help the team."Then a new world is open to you, and you are on the way to become a contributor as well as a growing individual. Of course, we should never stop learning. But now you learn through gaining experience in contributing your knowledge and practicing your technical skills. Technical skills are surly important, but some new hires may focus too much on technical skills and miss other important factors. Keep in mind that to present yourself well and get along with people in your new company can be even more important.

One way to get prepared for the industry sector is by attending conferences, seminars, and meetings sponsored by a professional society such as the American Statistical Association; for example, its Biopharmaceutical Section offers rich opportunities for engagement. Another way is to get acquainted and even contribute to the methodological and content research literature in areas sponsored by the industry sector. In addition, finding the right mentor can accelerate one's acclimation. Always keep finding ways to stay focused, make priorities, and continuously improve oneself by exploring these different opportunities and paths. We are the functions of the choices we make and the types of people whom we interact with.

4. Any advice on soft skills, mentorship, and professional networking?

Let's make it simple – soft skill means "soft." Being soft is not weak but flexible, so that you can adapt to unexpected changes and things out of your expectations. As an example, when you take on a new project that you don't like, instead of complaining, try your best to complete it. This is being soft toward yourself first. Chinese Daoist advocates softness with the image of water. We can be soft like water merging with our environment with least resistant and being beneficial to others. The most important skills are communication skills and leadership skills. Even for scientific communications, how to deliver storytelling, make laymen understand complex problems, and set up collaborations are various areas that statisticians can work on. For both communication and leadership skills, we need to find ways to speak up and elaborate on ideas although who the audience is can be highly critical when tailoring the leadership and communication skills to.

Professional networking is extremely important not only in your own organization but also in the industry. Be courageous and proactively reaching out to get to know new people are key area to improve for quantitative scientists who are in general introverts. Don't be afraid to schedule a 30 mins introduction meeting on senior leaders'calendars. Engaging with diverse professionals from various functions can offer a wealth of perspectives to understand the business better and to build potential long-term (collaboration) relationships.

As a newcomer in a chosen organization or field, we may also look for senior or peer mentors, as well as friendly and trusting buddies. Don't be shy to engage in confidential but straight talks with them. Mentorship is not one-directional as both can learn from each other, and if compatibility is an issue, one may also consider short- (e.g., one-off or few times) vs. long-term (e.g., 12 months) mentoring relationships.

5. Top Ten Tips for Successes

Throughout the entire lively panel discussion, a few insightful wisdoms emerged for Statisticians and Data Scientists, especially those who are studying and still in their early-career stages.

1. Communication requires both courage and practice.

2. Go meditate.

3. In everyone one of us, there is a good wolf or a bad wolf. Which one wins? The one that you feed, i.e., spending time to cultivate.

4. Inject and infuse "Chi"in life - career is like a tree, spread wide to collaborate.

5. Meet at least five new people through each professional networking opportunity.

6. Mentorship does not imply hierarchy - reach out and shine brightly!

7. Propel yourself constantly to find new paths like a lifelong runner.

8. Soft skill is "soft,"like water merging with your environment with least resistance. The Ying versus the Yang.

9. The smartest person in the room? The wrong room.

10. Try it! You may like your new adventure, or just cross it out.

Disclaimer

Upcoming Events

Please find below a list of upcoming ICSA meetings and co-sponsored meetings. This list also appears on the ICSA website. If you have any questions, please contact Dr. Mengling Liu, the ICSA Executive Director (`executive.director@icsa.org`).

ICSA Sponsored Meetings:

ICSA 2024 Applied Statistics Symposium

June 16 - 19, 2024
The ICSA 2024 Applied Statistics Symposium will be held at Vanderbilt University, Nashville, TN. The conference will be at Loews Vanderbilt Hotel. The theme of the symposium is Data-driven Decision Making-Unleashing the Power of Statistics. For detailed information, please refer to this site: 2024 ICSA Applied Statistics Symposium(`https://symposium2024.icsa.org/`).

ICSA 2024 China Conference

June 28-30, 2024
The 2024 ICSA China Conference will be held at Wuhan, Hubei, China from June 28 – 30, 2024. It will be co-sponsored by Zhongnan University of Economics and Law (ZUEL). The conference venue will be at Wuhan East Lake Hotel. The hotel information can be found at http://www.jnhotel.com/. For more information, please contact the Scientific Program Committee Chair, Professor Xinping Cui at `xpcui@ucr.edu`. The timeline for proposals of short courses and invited sessions has passed. If you have any questions, please contact the conference organizers directly. For detailed information, you may refer to this site: 2024 ICSA China Conference. ICSA 2024 China Conference invites applications for the Junior Researcher Award by April 15, 2024. Awardees will be selected from junior researchers who submit their papers for presentation at the conference. For more details, please visit `https://icsa.zuel.edu.cn/fhtjxhHome/single/1656.html`.

ICSA Co-sponsored Meetings:

IMS Asia Pacific Rim Meeting

Postponed to January 2024
The sixth meeting of the Institute of Mathematical Statistics Asia Pacific Rim Meeting (IMSAPRM) will provide an excellent worldwide forum for scientific communications and collaborations for researchers in Asia and the Pacific Rim, and promote collaborations between researchers in this area and other parts of the world. The meeting will be held in Melbourne, Australia and please see `http://ims-aprm2021.com/` for details. Firm dates will be announced later.

International Conference of Statistics and Data Science

July 9-10, 2024
The "2023 International Conference for Statistics and Data Science" was successfully conducted on July 12-13, 2023 (`https://www3.stat.sinica.edu.tw/2023icsds/index.html`). The "2024 International Conference for Statistics and Data Science" will be co-hosted by the Department of Statistics at National Chengchi University, the Institute of Statistics at National Yang Ming Chiao Tung University, and the Taiwan Chapter of the International Chinese Statistical Association (ICSA). The organization committee would like to invite you to participate in the International Conference of Statistics and Data Science to be held on July 9-10, 2024, in National Chengchi University, Taipei, Taiwan.

Fifth International Workshop on Statistical Analyses of Multi-Outcome Data

July 9 – 10, 2024
The "Fifth International Workshop on Statistical Analyses of Multi-Outcome Data," also known as SAM 2024, will take place in Salzburg, Austria, on July 9-10, 2024. Salzburg, renowned as Mozart's birthplace and the picturesque setting for the film "The Sound of Music," is a spectacularly scenic city and an ideal destination for a summer visit. Our workshop covers a broad range of topics, such as complex longitudinal and survival data analysis, high-dimensional data analysis, precision medicine, and artificial intelligence/machine learning methods, among others. There will be 2 plenary sessions, 24 invited sessions, and contributed sessions. A banquet will be held on the evening of July 9. Please visit `https://samworkshop.github.io/SAM_2024/` for more details. If you have any question, please contact Dr. Lei Liu (`lei.liu@wustl.edu`).

ICSA Webinar Flyer

INTERNATIONAL CHINESE STATISTICAL ASSOCIATION

泛華統計協會

No Experience, No Problem

- Launching a Prosperous Career in the Pharmaceutical Industry

Panelist: Yongming Qu & Xiyuan Gao   **Facilitator:** Helena Fan

February 16, 3:00-4:00Pm EST

Registration link: https://us06web.zoom.us/webinar/register/WN_R70L_MYaSte1Dd0Dr0IdBA

About the webinar:

From the viewpoint of both a seasoned hiring manager and an excelled candidate, learn:

- Career path in the pharmaceutical industry
- Plan your career for success even in a challenging job market
- Interview preparation and skills: What hiring managers really want to know about you, and tips to ace an interview
- Qualities for long term success in the pharmaceutical industry

Yongming Qu is currently a Vice President and a technical leader in Department of Statistics and Advanced and Analytics at Eli Lilly and Company. He received his PhD in Statistics from Iowa State University in 2002 and subsequently joined Lilly. He has made significant contributions in all phases of clinical development. He has been passionate in developing new statistical methods for better clinical trial design and data analysis that impact drug development in and outside Lilly. He published more than 90 articles in statistical and medical journals. He is a Fellow of American Statistical Association.

Xiyuan Gao is working as a Senior Research Statistician at AbbVie Inc. since May of 2023. Before joining AbbVie, she had finished three internships at Bayer, Novartis, and the Missouri Department of Conservation. Xiyuan received her Ph.D. in statistics from University of Missouri-Columbia in 2023. During her PhD study, she has received ICSA Applied Statistics Symposium Student Paper Award, the Second Place of ASA Statistical Significance Award, and the Third Place of JSM Biopharmaceutical Poster Award.

Helena Fan is a co-founder of The Lotus Group, the leading recruitment firm for biometric professionals in the life science industry. With an MBA from the University of Southern California and a Master's in Public Health from West China University of Medical Science in China. Helena brings a wealth of knowledge and expertise accumulated over her impressive 20-year career in the staffing industry. Her journey includes pivotal roles where she has made significant contributions to the field, aiding numerous individuals in securing dream opportunities and achieving their career aspirations.