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A Message from the Chair

Dear QSR Section members,

I would like to begin with thanking each and every one of you for your continued support for the QSR section in 2019-2020. While school and work have changed since March 2020 due to COVID19 pandemic, we achieved continuous success of engaging the QSR community with various activities, new initiatives, and new collaborative events jointly organized with other communities outside the QSR section!

This year's INFORMS Annual Meeting will be held virtually for the first time from November 7 to November 13, 2020. The QSR business meeting will be held online on Tuesday, November 10, 2020 from (5:45-6:45 PM) (EDT). On behalf of the QSR officers, I would like to welcome every one of you to the meeting. Thanks to the QSR Advisory Board, QSR Council members, and many volunteers, QSR Section has created a lot of new activities this year. This is a great chance for us to get together, review the progress, and provide your comments and suggestions for the future.

The QSR Section is sponsoring 38 amazing sessions in the INFORMS Annual Meeting 2020, which makes us one of the most active sections in the INFORMS even during this difficult year. These sessions include four award competition sessions (best refereed paper competition, best student paper award competition, industrial data challenge competition, and student interaction and poster competition), two journal sponsored sessions (IISE Transactions and JQT), two panel discussion sessions on industry job application and editor's perspective in publishing data science-focused papers, and five joint

sessions with Data Mining, Public Sector OR and ENRE-Energy-Climate. In summary, the QSR sessions will cover a broad spectrum of topics including smart and connected systems, machine learning, data science, artificial intelligence, high dimensional data analysis, spatial-temporal data analysis, computer experiments and quality and reliability engineering. I would like to thank all the session organizers for their great efforts during this difficult year and especially, the QSR chair-elect Dr. Kaibo Liu for putting together this exciting program.

The QSR Best Student Paper Competition received 26 high-quality submissions this year. I would like to thank Dr. Jian Liu (University of Arizona), Dr. Chiwoo Park (Florida State University) and Dr. Chen Zhang (Tsinghua University) for organizing this competition, especially overcoming the challenges in managing paper presentations and review processes with the short notice from INFORMS this year. I would like to thank all the reviewers and the judges for their hard work in reviewing the papers. Four finalist papers will be presented on Sunday, November 8, 2020 (1:15-2:30PM) (EDT) via a live session in Virtual Room 44. All the finalists and the awardees will be recognized in the business meeting.

The QSR Best Refereed Paper Competition received 26 excellent papers. I would like to thank Dr. Irad Ben-Gal (Tel Aviv University), Dr. Peihua Qiu (University of Florida), and Dr. Kaibo Wang (Tsinghua University) for organizing this competition, especially in this challenging time. I would like to thank all the referees and judges for their efforts in reviewing the papers. Four finalist papers will be presented on Monday, November 9, 2020 at (12:30-1:45PM) (EDT) via a live session in Virtual Room 44. All the finalists and the awardees will be recognized in the business meeting.

The Industrial Data Challenge Competition received 14 great submissions. The topic of this year's Data Challenge is "CT Scan Diagnosis for COVID-19". I would like to thank Dr. Weihong "Grace" Guo (Rutgers University), Dr. Trung (Tim) Le (North Dakota State University), and Dr. Ran Jin (Virginia Tech) for choosing topics relevant to our lives under COVID-19 pandemic and organizing this competition. I would like to thank all the referees and judges for their efforts in reviewing the submissions, especially Dr. Ran Jin (Virginia Tech) and Mr. Xiaoyu Chen (QSR Webmaster, Virginia Tech) for using their computation systems in evaluation. Four finalist papers will be presented

research helped the team identify different short-term and long-term strategies for growing the QSR membership: (1) The team identified QSR contacts/liaisons for related conferences such as IEEE-CASE, APARM, etc. to promote QSR and its activities, (2) The team initiated an effort to organize QSR joint sessions at related conferences, such as NAMRC/MSEC, ENBIS, etc. (3) The team began an initiative to work with senior/active QSR members toward their nomination for INFORMS awards/committees, such as INFORMS Advocacy Governance Committee (AGC), etc., (4) The team sent out emails/flyers to recent members to encourage them to renew their membership, (5) The team also prepared an exit survey for past members to collect their feedbacks.

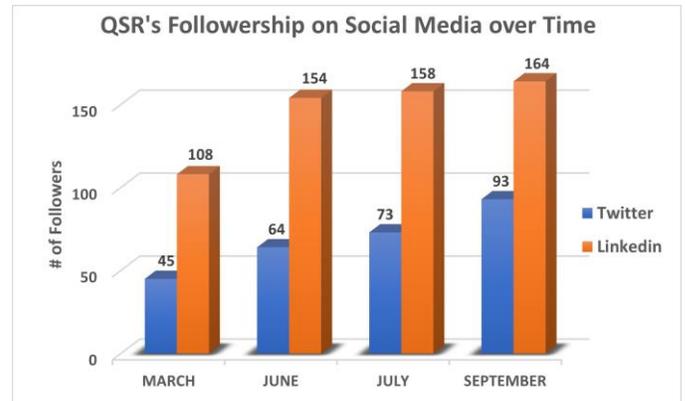
QSR Industry Relation Subcommittee. Dr. Weihong “Grace” Guo (Rutgers University, QSR Council Member), along with the volunteers Dr. Abdallah Chehade (University of Michigan-Dearborn), Dr. Trung (Tim) Le (North Dakota State University), Dr. Jia Peter Liu (Auburn University), and Dr. Xiaochen Xian (University of Florida), focused on enhancing the industry-academia collaborations and increasing our QSR visibility and impact in the industry. A panel session on “QSR in Industry” was created in the INFORMS Annual Meeting 2020 and the session will be LIVE at 12:30-1:45pm on Wednesday, November 11. In the QSR Industrial Data Challenge, we have participation of around 50 teams with completed submissions from 12 teams. The submissions are evaluated by an online model testing platform (developed by QSR members Xiaoyu Chen and Dr. Ran Jin of Virginia Tech for this Data Challenge) and the Judging Committee. Based on the evaluation, four finalists are identified and will be presenting LIVE at 2:00-3:15PM on Monday, November 9. All the finalists and the awardees will be recognized in the business meeting.

QSR International Subcommittee. It’s been a challenging year for international activities. Events have been cancelled and international travels have been disrupted. To foster international collaborations and increase the visibility of QSR society worldwide during this challenging time, the International Subcommittee presents a special session featuring QSR international research activities with speakers from outside the United States [TB43 Convergence of QSR and Machine Learning and Highlights of QSR International Research Activities]. The session is also co-listed under the Machine Learning/Intelligence Cluster with speakers from industry research lab (IBM Almaden Research Center).

QSR Public Communication Subcommittee. Dr. Youngjun Choe (University of Washington, QSR Council Member), Dr. Abdallah Chehade (University of Michigan-Dearborn, QSR Public Communication Officer & Editor of QSR Annual Newsletter), Dr. Aziz Ezzat (Rutgers University, Webmaster of QSR Social Media), and Mr. Xiaoyu Chen (Virginia Tech, Webmaster of QSR Website) worked together to promote communication within

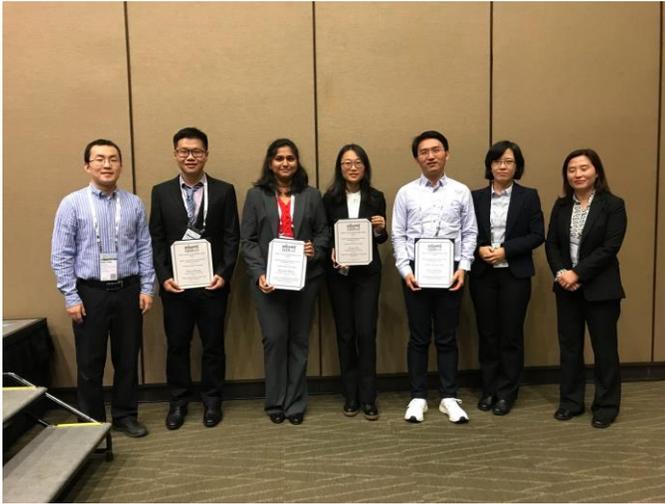
INFORMS QSR Section and its visibility to industry, academia, and beyond. They administered newsletters, surveys, QSR website, and social media, and moderated email communication for the QSR mailing lists.

The subcommittee with the tremendous efforts by Dr. Aziz Ezzat (Rutgers University) has helped promote QSR’s virtual visibility on social media platforms to communicate QSR-related news, events, announcements, and updates/highlights to the broader INFORMS audience. As a result, our followership/membership on our LinkedIn and Twitter accounts grew by 51.85% and 106.67%, respectively, since March 2020 – See the following figure.



QSR Webinar Series Initiative. The Webinar committee is chaired by council member Dr. Yili Hong (Virginia Tech) with a committee member Dr. Yifu Li (University of Oklahoma). In collaboration with the Academic and the International Subcommittees, the team organized three webinars. During spring 2020, Dr. Satish Bukkapatnam (TAMU) gave a webinar on “Dealing with Streaming Data for Smart Manufacturing.” During fall 2020, Dr. Kamran Paynabar (Georgia Tech) gave a webinar on “Low Dimensional Learning From High Dimensional Data for System Modeling and Improvement.” Moreover, Dr. Ran Jin (Virginia Tech) gave a webinar, co-organized by QSR and ENBIS, on “PRIME: A Personalized Recommendation for Information Visualization Methods via Extended Matrix Completion.” The webinar series aim to provide opportunities for members to learn about cutting edge research enabled by the QSR Section and discuss research questions with leaders in relevant fields. QSR members can find the presentation videos and slides at INFORMS/QSR Connect. If you are interested to become a future webinar speaker and publicize your research, please contact me to sign up.

As you can imagine, the QSR council members and volunteers put their tremendous efforts, such that every QSR member received more benefits and QSR section could keep growing stronger in long term. I would like to take this opportunity to express my sincere gratitude for their dedicated services to QSR members. The QSR council looks forward to having more volunteers to join in various



2019 QSR Best Student Paper Award Finalists

Change in QSR Advisory Board

The QSR Advisory Board, currently consisting of 15 senior leaders in the field of Quality, Statistics and Reliability, has been providing advice on the development of QSR section. The board oversees the operation of QSR, provides advice on various activities, and supports the QSR officers to run the QSR section effectively and efficiently. Professor Yu Ding at Texas A&M University has been serving as the Advisory Board Chair since 2017, and his term will come to an end at the 2020 INFORMS annual conference. Professor Elsayed Elsayed at Rutgers University kindly agreed to serve as the next chair of the board for 2020-2023.

According to the QSR By-Law, as many as one-third of the advisory board can be newly appointed each year. This coming year, five board members will retire at the end of the 2020 INFORMS annual conference and five new members will join the board after the conference, as follows.

Retiring board members: Dr. Enrique Del Castillo (The Pennsylvania State University), Dr. Darek Ceglarek (University of Warwick), Dr. Abhi Deshmukh (Purdue University), Dr. Bani Mallick (Texas A&M University), and Dr. Ming Yuan (Columbia University).

New members: Dr. Shan Ba (LinkedIn), Dr. Vijay Nair (Wells Fargo), Dr. Judy Jin (University of Michigan), Dr. Ron S. Kenett (KPA group), and Dr. Edwin Romeijn (Georgia Institute of Technology).

We thank Professor Yu Ding and the retiring board members for their sincere advice and support for the QSR community and look forward to working with Professor Elsayed and new board members.

Member Updates

• *Honors and Awards Received*

Linkan Bian received Thomas B. & Terri L. Nusz Endowed Professorship and was inducted into Mississippi State University/BCoE Academy of Distinguished Teachers.

Youngjun Choe was selected as a Fellow of the NSF-supported Operations and Systems Engineering Extreme Event Research (OSEEER) network's Early Career Mentoring (ECM) program.

Zhenyu (James) Kong was elected Fellow of the Institute of Industrial and Systems Engineers (IISE).

Kaibo Liu received the Innovations in Education Award from Institute of Industrial and Systems Engineers (IISE), 2020.

Alice Smith. received the Yellow Hammer Women of Impact Award, for her contributions across business, government, and non-profit sectors.

Yisha Xiang received the NSF CAREER Award for her proposal "Enhancing Environmental and Economic Sustainability of Additive Manufacturing-based Remanufacturing".

• *Grants Received*

Adel Alaeddini (Co-PI), received a grant from Department of Homeland Security-United States Coast Guard for the proposal entitled "Novel Interdisciplinary Modeling and Deep-Learning Approach towards Improved Leeway Divergence Prediction", \$289K.

Adel Alaeddini (Co-PI), received a grant from Schlumberger Co. for the proposal entitled "Downhole-Gauge Data Analytics", \$110K.

Linkan Bian (PI), received grant from Department of Defense for the proposal entitled "SBIR: Logistics and Technical Advantages of Additive Manufacturing for Aviation Shop Sets (LOGITAAMS)", \$150K.

Linkan Bian (PI), received grant from National Center for Manufacturing Sciences (NCMS) for the proposal entitled "Machine Learning for Quantifying the Chemistry-Process-Structure-Property-Performance (CPSPP) Relationships of Additive Manufacturing Processes", \$450K.

Abdallah Chehade (PI), received grant from Ford Motor Company for the proposal entitled “AutoML for Health Monitoring and Prognostics of Vehicle Components”, \$210K, 05/01/2020 – 04/30/2022.

Abdallah Chehade (PI), received grant from Ford Motor Company for the proposal entitled “Hybrid ML and Statistical Models for Warranty Data Forecasting”, \$151K, 05/01/2020 – 04/30/2022.

Abdallah Chehade (PI), received grant from Ford Motor Company for the proposal entitled “Synthetic Data Generation for Training and Validation of AI-based Systems”, \$109K, 05/01/2020 – 04/30/2021.

Abdallah Chehade (PI), received grant from Honda R&D Americas for the proposal entitled “Spatio-temporal ML Models for Temperature Estimation”, 06/15/2020 – 12/31/2020.

Youngjun Choe (PI), NSF DMS-1952781 “Data-Enabled Acceleration of Stochastic Computational Experiments”, \$160K, 08/01/2020 – 07/31/2023 (Co-PI: Yen-Chi Chen).

Youngjun Choe (Co-PI), NSF CMMI-2031119 “RAPID: The COVID-19 Pandemic Seattle, Washington Street View Campaign”, \$196,943, 05/01/2020 – 04/30/2021 (PI: Joseph Wartman).

Elsayed Elsayed (Co-PI), **Weihong "Grace" Guo** (Co-PI), and collaborators received grant from Department of Homeland Security-Cybersecurity and Infrastructure Security Agency on "Threat Assessment for the Information and Communications Technology Supply Chain", \$303K, 08/2020 – 06/2022.

Mostafa Gahrooei (PI), NSF CMMI-2027024 “A Dynamic Disruption Prediction System for Transportation Networks at a Road-Segment Level of Granularity”, \$247K, 10/01/2020 – 09/30/2023.

Zhenyu (James) Kong and his collaborators (from five different universities) received a large scale grant (\$23M) from NSF entitled “MIP: GlycoMIP – Automating the Synthesis of Rationally Designed Glycomaterials”.

Kaibo Liu (PI), received a new grant from ERDC on proposal titled “Enable Predictive Maintenance for Smart and Connected Systems - Harnessing the Power of Artificial Intelligence”, \$419K, 09/2020 – 09/2023.

Kaibo Liu (PI), and his collaborator received a new grant from DOE on proposal titled “Engineering-Informed, Data-Driven Degradation Modeling, Prognostics and Control for Radiation-induced Void Swelling in Reactor Steels”, \$400K, 10/2020 – 09/2023.

Kaibo Liu (PI), received a new grant from 3M on proposal titled “Online anomaly detection and fault localization for heterogeneous data streams”, \$135K, 11/2019 - 10/2020.

Kaibo Liu (Co-PI), and his collaborator received a new grant from AFOSR on proposal titled “Mesoscale Modeling of Soft Matter: A Bottom-up Approach”, \$600K, 07/2020 – 06/2023.

Kamran Paynabar (PI), received a grant from Department of Energy for the proposal entitled “Automating Detection and Diagnosis of Faults, Failures, and Underperformance in PV Plants”, \$275K, 03/01/2020 – 03/31/2023.

Kamran Paynabar (PI), received a grant from Ford Motor Company for the proposal entitled “ML-based recommendation system for diagnosis and root-cause identification of on-road quality issues”, \$200K, 03/11/2020 – 03/09/2022.

Kamran Paynabar (PI), received a grant from National Institutes of Health for “Effective allocation of test centers for covid-19 using machine learning and adaptive sampling”, \$450K, 08/01/2020 – 07/31/2022.

Chenhui Shao (PI), received the NSF CAREER Award for the project “Dynamic Process-Attribute-Data-Performance Modeling to Enable Smart Ultrasonic Metal Welding”, \$500K, 2020 – 2025.

Chenhui Shao (PI), received a grant from Department of Energy for “Novel Energy-Efficient Drying Technologies for Food, Pulp and Paper, and other Energy Intensive Manufacturing Industries”, \$3,459,860 (share: \$313,294), 2020 – 2023.

Chenhui Shao (PI), received a grant from the Center for Advanced Research in Drying for “Smart Drying Enabled by Multi-Source Data Fusion and Machine Learning”, \$50K, (share: \$25K), 2020 -2021.

Chenhui Shao (PI), received a grant from the REMADE Institute for “Quantitative Non-Destructive Evaluation of Fatigue Damage Based on Multi-Sensor Fusion”, \$100K, (share: \$33.3K), 2020 – 2021.

Xiaochen Xian (PI) received a grant from NSF for “RAPID: Adaptive Sampling Strategies for COVID-19 Mass Testing”, \$130K, 06/01/2020 – 05/31/2023.

Yisha Xiang received the NSF CAREER Award for her proposal “Enhancing Environmental and Economic Sustainability of Additive Manufacturing-based Remanufacturing”.

• *Ph.D. Degrees Earned*

Zhanlin Liu (2020), “Data-Driven Polynomial Chaos Expansions for Uncertainty Quantification” Ph.D. Dissertation, University of Washington, Advisor: Youngjun Choe. Current Position: Research Scientist at Wyze Labs.

Changyue Song (2020), “Internet of Things-Enabled Degradation Modeling, Inference, and Prognosis” Ph.D. Dissertation, University of Wisconsin-Madison, Advisor: Kaibo Liu. Current Position: Assistant Professor, School of Systems and Enterprises, Steven Institute of Technology.

James Starling (2020), “Simulation and Statistical Methods in Proactive and Strategic Obsolescence Management” Ph.D. Dissertation, University of Washington, Advisors: Christina Mastrangelo and Youngjun Choe. Current Position: Assistant Professor at United States Military Academy at West Point.

Nooshin Yousefi (2020), “Maintenance Modeling for Degrading Systems with Individually Repairable Components using Optimization and Reinforcement Learning”, Ph.D. Dissertation, Rutgers University, Advisor: David Coit. Current Position: Data Analyst, CenturyLink, CO.

Jian Zhou (2020), “Joint Optimization of System Hardening and Restoration for Resilience Enhancement against Cascading Failures”, Ph.D. Dissertation, Rutgers University, Advisor: David Coit. Current Position: Assistant Professor, Nanjing University of Science & Technology, Nanjing, China.

• *Promotions and News*

Call for Papers: 2021 IISE Annual Conference & Expo. Location: Palais des Congres de Montreal, Montreal, Canada. Date: May 22 – May 25, 2021. **Track:** Quality Control and Reliability Engineering (QCRE). Website: <https://www.abstractscorecard.com/cfp/submit/login.asp?EventKey=RWXHKERF>

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<https://groups.google.com/group/informs-quality-statistics-reliability>

INFORMS QSR LinkedIn Group

<https://www.linkedin.com/groups/3793057>

INFORMS QSR YouTube Channel

https://www.youtube.com/channel/UCRscxnV_WgAGU6SOoTo0UJQ

INFORMS QSR Twitter.

https://twitter.com/INFORMS_QSR

An Interview with Elected INFORMS Fellow (Dr. Susan Albin)

Susan Albin is a professor of Industrial & Systems Engineering at Rutgers University. She is known for her research in quality engineering, queueing theory and industrial process monitoring and analytics. She served as the 16th president of INFORMS, and former editor-in-chief of IIE Transactions (now IISE Transactions), the flagship journal of the Institute of Industrial and Systems Engineers. Throughout her career, Dr. Albin won many awards including recently being inducted as an INFORMS fellow. She has also been awarded as the Rutgers SOE outstanding faculty of the year. Dr. Aziz Ezzat has taken this great opportunity to have an interview with Dr. Albin on October, 2020.

Aziz Ezzat: Professor Albin, we really have the pleasure to have you today! How are you?

Susan Albin: I am very good, and I am very glad to have you here in my tiny room/office!

Aziz Ezzat: Same here! Susan, tell us a little bit about your early training and career? What is about industrial engineering that really attracted you in first place?

Susan Albin: You know I have been asked this question many times, and, I used to lie! But this time, I am going to tell the truth...

I started in the school of arts and sciences, and I had a boyfriend, and the boyfriend said: “I don’t get why you’re not in Engineering. You’re taking physics, you’re taking calculus, and this is obviously what you like. Why not get into Engineering?” and I said “I never thought of that!” So, I transferred to engineering and it was absolutely among the best decisions I have ever made!

Then, I had to take “Intro” as most of our students at Rutgers and other schools do, to learn about all the engineering disciplines. The minute a person started speaking about IE, I could not believe that I could major in what is in my head!

I am the type of person that is always trying to optimize... which toll booth? Which cashier at the supermarket? I am constantly calculating to find optimality. At the same time, I have a great appreciation for the randomness of the universe. With this combination of optimization and

probability, I just could not believe I could major into what is already completely in my life philosophy. So, I signed up...and then that was the beginning!

Aziz Ezzat: What a compelling story!

Susan Albin: Thank you!

Aziz Ezzat: So, you majored in IE, and then came a moment which shaped many people's journeys in our area, when you and Prof. Shi co-founded the QSR section, which later became a platform for all of us to interact, learn, and meet new friends and wonderful people. Tell us a little bit about that moment?

Susan Albin: This is not so complicated. First of all, it was Jan, Jan, Jan! I was active in INFORMS at higher levels, so I was aware of how the process is to do various things, but really, the whole moving spirit was Jan Shi.

For me, I thought this is heaven! I used go to INFORMS with all my colleagues at Bell Labs who have been going to INFORMS for many years, but I was doing research in quality and multivariate statistics, and there was really no place for me to give my talks. Applied probability, which has been my home when I was doing queuing work, was not the appropriate place to present my work in the direction that I had moved in. Jan was willing to do all the work...to build a house brick by brick, so that we can all have a home!

Aziz Ezzat: That is great to hear. So, still on QSR and those moments that surrounded its creation...What was the motivation of creating the QSR advisory board?

Susan Albin: Well, we needed members! And then, we tended to be the next generation and a little widely experienced at INFORMS. So, it was a practical way to give this new section a little weight. That was the idea.

Aziz Ezzat: So, Susan, at the time QSR was founded versus today's QSR, what do you think is particularly special about QSR today?

Susan Albin: We have been trying to get bigger. The thing that is extremely special about QSR is that all members are active! Other groups can have larger number of members, but we have this incredibly high participation rate. Also, at QSR, we are very interested in the data, but as opposed to pure statisticians, we are also interested in the systems that the data come from. For example, if something is not right at Station #2, a statistician's approach would focus on Station #2, but at QSR, we would first ask: Well, what happened in Station #1 in first place? And this system's point of view defines what we do. We are a little bit between chairs, but with the fantastic proposal that Yu Ding wrote for the INFORMS Journal on Data Science, I am hoping that this will be a really great venue where QSR members will really support the journal.

Also, something I admire about QSR is that quality people are always preaching continuous improvement, but we

actually practice it! In other aspects of INFORMS, we have a ton of models, but at the end, a lot of decisions are just made because there is a time constraint and there is no time to put in the effort. But in QSR, there is always this effort of continuous improvement.

Something also about QSR...we are very inclusive! We get a new member and everybody welcomes that member and make sure they talk to them. If somebody new is giving a talk, we make a lot of attention to the students and organize many student-oriented activities. By the time someone is a new professor, they've already been to several informs meetings and already have many QSR friends.

Aziz Ezzat: Yes, I can definitely attest to that. I came to Rutgers, already knowing half of the department, thanks to QSR. I think that helped me get the job!

Susan Albin: That helped the department too. That's how we got you!

Aziz Ezzat: Thank you! Now moving from QSR, to the bigger entity, INFORMS. You served as the 16th president of INFORMS. Could you share with us your experience during your presidency. Also, what is your advice for QSR members to take leadership positions at INFORMS?

Susan Albin: First of all, let me bring that thing down a little. When I first graduated and got my PhD, I had just made the transition from Bell Labs to Rutgers. There was a famous probabilist, Professor Disney, and I am standing next to him at the Applied Probability business meeting, and he says "We need people to run for the council of Applied Probability" For me, it was like someone is suggesting to run for senator or captain of Baseball team! But he said "Do it! Just do it!" I just couldn't believe it, so I did what he told me. He wasn't a professor at my school, but he had written books and I was familiar with his name. That was the beginning of my participation at INFORMS, and then you just keep showing up, try to do a good job, and it builds from there. So, it's consistently, year after year, willing to be... well, not just willing to be, but happy to be... on various committees, specially publications, meetings, etc. Really, 90% of it was a) showing up, and b) doing the work, which if you're in QSR, it is perfect training!

One thing I am also proud I have done during my presidency is when we had heard about this idea of special groups organizing meetings and events within INFORMS from other societies. I really pushed and supported it. So, now, before and after INFORMS, we have special workshops within societies and sections. It really did work when I was on the board.

I would like to say something dramatic that happened also during my presidency. This is the story: INFORMS was publishing 10-12 journals at the time, and all of our profit was coming from journals. We were breaking even on the meetings, but there was a big business office, and there was

a big budget. The main source of income were the publications. As people's publications went online and essentially became free, the question was: would we go under? How are we going to support ourselves?

Two fabulous people who were on the board: Anne Robinson and Jack Levis said: "We should expand into analytics!" Traditional OR people were like: "What is exactly is analytics? We already do it!" But Anne and Jack did a huge amount of work, working with consulting companies, and opening the doors to many more business people and much more applied work. They went for the highest quality, and that saved INFORMS! That saved INFORMS!

Long time ago, we used to have two general meetings, but now we only have the general Fall meeting, and in the spring, we have a meeting that focuses more on analytics. The talks are superb, much more like a Ted talk. Now, there are a lot of awards related to applied work at INFORMS, mainly about using OR and analytics to make a gigantic impact. Three that stand out in my mind are Edelman awardees. One was UPS doing all the routing of its trucks and organizing all of its operations in a project that you can actually tune in to channel 13 to hear about! Another one of my favorites, at the end of Apartheid in South Africa, they had to do a complete re-evaluation of the national budget, and OR was the best tool to do it. Another one of my favorites, was, a Dutch group who had won an Edelman prize for the use of OR to make a 50-year plan for the management of water in their country. The Edelman event is a big event, it's in a ball room, very produced... there are videos, whole day of talks, judging procedure, and validation. It's a really legitimate prize. Opening INFORMS to this whole other aspect was a huge thing and the people who deserve credit are Anne and Jack. This happened during my presidency and I was certainly a gigantic support of them.

Aziz Ezzat: So, Susan, I remember myself as a student at QSR, not so long time ago, and talking to you was one of the things that helped me mature early as a researcher, what's your advice to QSR students and junior faculty?

Susan Albin: I am so impressed with what QSR students and junior faculty are doing... their expertise in the systems they work on, their embrace and creative invention of new techniques to handle crazy kind of data. Just do what you're doing and keep going!

I also can think of one more thing. There are two ways to get lots of citations. Way #1 is to do a paper that does a comprehensive literature review of a new area. Since you have to do it anyway to start on a big new research project, it could be a good thing to do. The other way, which I think is, by far, the biggest contribution you can make to the field, is not just to find a solution to something, but to find a new question! So, you know, it is not that you can sit there and find a new question. The way a new question arises is that you're working on a problem and nothing that exists works,

until a new question is framed, so... it is just about being active and present, and recognizing it is ultimately the looking for a new question!

Aziz Ezzat: Susan, I think we've been over most of the questions that I had prepared. Do you have any closing words?

Susan Albin: YES! This is for the QSR family. QSR is like a hidden gem at INFORMS, and that does not have to be! If you feel QSR is your home, and this appeals to you, there is absolutely no reason that we shouldn't have someone at the INFORMS board at every minute, and that we should have a president every 10 years~ For example, our current president of INFORMS, Pinar, she's at Georgia Tech. How many QSR members are at Georgia Tech? Many! If you want to, you can!

Aziz Ezzat: Susan, it has been an honor doing this with you. I thank you very much for participating, hopefully we can have more chats with you in the future!

Susan Albin: Thank you! I look forward to that as well!

An Interview with Elected INFORMS Fellow (Dr. Judy Jin)

Jionghua (Judy) Jin is a professor in the Department of Industrial and Operations Engineering and the director of Manufacturing Program of Integrative Systems and Design Division at the University of Michigan. Her research interests are in data fusion and analytics in quality engineering with primary applications in manufacturing. She served as vice president of International Activities for INFORMS and chair for INFORMS QSR section. Dr. Abdallah Chehade has taken this great opportunity to have an interview with Dr. Jin on October, 2020.

Abdallah Chehade: Could you tell us about your early training and career? And what is about industrial engineering that attracted you to it?

Judy Jin: I received my BS & MS in Mechanical Engineering and Ph.D. in Industrial and Operations Engineering. Before I came to the US, I worked at Southeast University in China for seven years, and my research focused on signal processing for monitoring and diagnosis of large machinery equipment.

I came to the US in 1994 as a visiting scholar and then started my PhD in 1996 in the Department of Industrial & Operations Engineering at the University of Michigan. I am so lucky to have met my former PhD advisor Professor Jan Shi and extremely grateful to him for introducing me to the industrial engineering (IE) field, which completely changed my career. I have been highly inspired by the interdisciplinary IE research. Particularly, I have always been fascinated by data analytics research in quality

engineering because this field is closely related to my previous training and research experience on data analytics and mechanical engineering.

Abdallah Chehade: Tell us about your time as a QSR chair?

Judy Jin: I was Chair-elect and Chair of QSR in 2005 and 2006, respectively. Although at that time QSR section was relatively small in INFORMS, we had an excellent leadership team (QSR advisory board and council members) and enthusiastic QSR members to fully support and actively organize as well as participate a wide range of QSR activities. One of most significant activities was the QSR's sponsored cluster with 36 sessions, which was ranked as one of top five largest clusters at the annual INFORMS'2005 meeting. This record had greatly attracted the attention from the INFORMS meeting organizers. In addition, the QSR's leadership team had also made various initiatives to increase QSR's interactions with other INFORMS's sections/societies, such as organized high-profile panels to discuss the interface between QSR and OR community, and jointly sponsored sessions with INFORMS Simulations Societies. We also outreached top leaders in the related research communities to help promote and reshape the QSR research, such as organized a panel session to share the Journal Editor's View about "Future Trend in QSR's Research and Applications". All these activities not only had broadened the QSR's visibility within INFORMS but also helped to attract non-INFORMS members to join QSR and INFORMS. I am very glad that some of these initiatives have still been kept today or expanded as the QSR feature sessions now.

Abdallah Chehade: How do you think INFORMS QSR helped you in your career?

Judy Jin: QSR has provided tremendous opportunities for me to grow my professional identity in the INFORMS community. It was truly an enjoyable and rewarding experience to work with our QSR colleagues and friends throughout all my service roles in INFORMS. During my 23-year connection with QSR, I have been continuously receiving strong mentoring/support from senior QSR leaders. I have also been delighted to make many personal friends in QSR, which makes my work much more pleasant and smooth. It is no doubt that QSR is a super supporting family for my career, and all my achievements in INFORMS are largely owed to the strong support from the QSR members. I would like to use this opportunity to express my deepest gratitude to the QSR members and will continuously devote myself to the QSR section.

Abdallah Chehade: Where do you see QSR stands now compared to the time when you joined?

Judy Jin: QSR was founded by Professor Jan Shi in 1996. I joined QSR in 1997 when I was a PhD student. I attended the first QSR business meeting at the annual

INFORMS'1997 meeting in Montreal, Canada. I remembered it only had 7 attendees and felt quite isolated from the INFORMS community. Compared to today's QSR, I am very proud of the QSR's achievements over the past 24 years! QSR has greatly increased its visibility and has now been considered as one of the most active sections in INFORMS. This is clearly evidenced by the significance of QSR sponsored cluster at the annual INFORMS meetings in terms of both the number and quality of sessions. Nowadays, QSR maintains, on average, nearly 40 sessions for the four-day annual conference. It is clear that QSR has been well considered as an attractive and charmed home section for faculty and students in the departments of industrial and operations engineering, system engineering, statistics, and business/management who are interested in research and education in the field of QSR.

Abdallah Chehade: What is so special and unique about INFORMS QSR compared to other subdivisions? How do you think INFORMS QSR blend-in with other subdivisions?

Judy Jin: Personally, I think that QSR research has its unique nature that promotes both advanced methodologic development and emerging industrial applications. As one major research area relating to data analytics methodologies, QSR is closely related to INFORMS's Data Mining Section and Analytics Society. However, QSR has its specialty that emphasizes data-driven design, modeling, optimization, and decision-making for improving complex engineering systems' quality and reliability. Therefore, QSR research promotes interdisciplinary data analytics and data-driven decision-making that are closely linked with complex engineering systems. QSR will certainly benefit from exchanging data analytics research with the INFORMS's Data Mining Section and Analytics Society, as well as from expanding the collaboration with other sections on emerging applications, such as "Healthcare", "Energy, Natural Resources, and the Environment" and "Service Science". The former will stimulate QSR's interdisciplinary research on data analytics methodologies and the latter will broaden the visibility and societal impact of the QSR research.

Abdallah Chehade: What advice do you have for the QSR community to continue to grow in the future?

Judy Jin: I would suggest QSR to set a feasible target to gradually grow the QSR membership to become a society in the near future. For example, (1) to attract more international members through international collaborations with the related foreign/international professional societies to mutually promote memberships and to jointly organize international conferences. (2) To attract more industrial members. Currently, most QSR members are from academia. Considering increasing demands in data analytics from industry, it is a good opportunity to attract industrial members. QSR may learn from IISE-QCRE (Quality

Control and Reliability Engineering) Division that has a large portion of industrial members. (3) to sustain student members by continuously engaging them after their graduation. In addition to these, continuously promoting advanced QSR research and emerging applications is critically essential to grow and sustain the QSR community.

Abdallah Chehade: You served as vice-president of INFORMS for International Activities from 2010 to 2013. Could you share with your experience and your advice for QSR members to take leadership positions at INFORMS?

Judy Jin: To be successful in the election of an INFORMS leadership position, my personal experience is to build a credential service record gradually. I started my QSR services as a session chair in 1999 and then was elected as a QSR's Council Member (2003), Chair-Elect (2005) and Chair (2006). Outside of QSR, I served in the INFORMS Marketing Strategy Committee (2007~2008) and was elected to serve as an INFORMS Subdivision Council Member (2008~2009). Afterwards, I was elected as the INFORMS-VP for International Activity (two terms during 2010~2013). So, the first important thing is to start and do the best services in QSR to earn the full support from the QSR members. Besides, it is also very important to catch all opportunities to nominate QSR members to involve INFORMS services beyond QSR, which will help to increase QSR's voices and get more attention from the whole INFORMS community. This would greatly benefit to the QSR's candidates in the election of INFORMS leadership positions. Undoubtedly, without the QSR's support, it would be impossible for me to gain the opportunity and to win the election of the INFORMS' leadership position.

Announcements

• *Job Openings*

The Hong Kong University of Science and Technology (Guangzhou campus)

Founding Faculty in the Information Hub

The Hong Kong University of Science and Technology (HKUST) invites applications for founding faculty positions at all ranks in Information Hub for its new campus in Guangzhou (GZ). The HKUST (GZ) Information Hub focuses on addressing global challenges arising from human interactions with information and technology in an era of digital transformation. The Hub is mainly comprised of four thrust areas: Artificial Intelligence, Data Science and Analytics, Internet of Things, and Computational Media and Arts. In each of these areas, we are committed to providing a world-class education and conducting cutting-edge research with practical applications, with the purpose

of not only advancing regional development but also making a global impact.

The Guangzhou/Shenzhen bay area is also one of the world's most important technology hub with great potential for collaboration with the local industry and for commercialization of translational technology. We welcome both senior and junior candidates to apply. This is a rare opportunity for candidates who want to influence the very early development of a top-ranked new university campus with endless potential for growth.

Data Science and Analytics Thrust Area (DSA)

The Data Science and Analytics thrust area focuses on unifying statistics, machine learning, optimization, and their related techniques. By analyzing and modeling data, we aim to transform analytics into industrial and business insights for effective decision making. HKUST(GZ) is interested in candidates who have a demonstrated ability to pursue high impact research in the areas of data science and analytics at all ranks. The initial focus areas include, but not limit to, data-driven AI & machine learning, statistical learning and modeling, industrial and business analytics (operations-related data analytics, business intelligence and strategy, etc.), sector-specific data analytics (healthcare, finance, insurance, marketing, manufacturing, transportation, etc.).

Remuneration

HKUST(GZ) offers highly competitive salary of international standard and will be commensurate with qualifications and experience. Generous research funds, ample laboratory space and excellent research equipment and support will be provided. Housing allowances will also be provided.

Application Procedure

Applications should be sent to <gzrecruitINF@ust.hk> together with (i) full CV; (ii) a statement of research, teaching, and service; (iii) up to five most representative publications in PDF formats; (iv) record of teaching performance (if any); and (v) names and contact information of three referees. Applications will be evaluated as soon as they are received and will receive full consideration until positions are filled.

About HKUST Guangzhou campus [<https://gz.ust.hk/>]

HKUST(GZ) offers a unique educational environment with four transdisciplinary hubs and 16 thrust areas. HKUST(GZ) offers superb research facilities, attracting top international faculty and students to conduct curiosity-driven and goal-oriented research to address the world's pressing scientific and technological challenges.

HKUST(GZ) is situated in Nansha District, Guangzhou, which is right in the center of the Greater Bay Area, one of

the most vibrant and dynamic regions in the world, neighboring Shenzhen, Hong Kong, and Macao. It is about 30 minutes away from Hong Kong by high-speed train. The new campus is under construction and is planned to open in 2022. The successful candidate may start working on the Clear Water Bay campus in Hong Kong before the new campus is completed.

QSR Executive Officers (2019-2020)

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Eunshin Byon
University of Michigan

Chair-Elect

Kaibo Liu
University of Wisconsin-Madison

Secretary/Treasurer

Wenmeng Tian
Mississippi State University

Council Members

Youngjun Choe
University of Washington

Lulu Kang
Illinois Institute of Technology

Xiao Liu
University of Arkansas

Weihong 'Grace' Guo
Rutgers University

Yili Hong
Virginia Tech

Public Communication Officers

Abdallah Chehade
University of Michigan-Dearborn

QSR Advisory Board (2020-2023)

• Chair

Yu Ding, Chair (2017-2020)
Texas A&M University

Elsayed A. Elsayed, new Chair (2020-2023)
Rutgers, The State University of New Jersey

• Members

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Rutgers, The State University of New Jersey

William Brenneman
The Procter & Gamble Company

Bianca Maria Colosimo
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Tapas Das
University of South Florida

Irad Ben-Gal
Tel Aviv University

Kwang-Jae Kim
Pohang University of Science and Technology

Peihua Qiu
University of Florida

Fugee Tsung
Hong Kong University of Science and Technology

Roshan Vengazhiyil
Georgia Institute of Technology

• Retiring members (2017-2020)

Enrique Del Castillo
The Pennsylvania State University

Darek Ceglarek
University of Warwick

Abhi Deshmukh
Purdue University

Bani Mallick
Texas A&M University

Ming Yuan
Columbia University

• **New members (2020-2023)**

Shan Ba
LinkedIn

Vijay Nair
Wells Fargo

Judy Jin
University of Michigan

Dr. Ron S. Kenett
KPA group

Edwin Romeijn
Georgia Institute of Technology

QSR Former Chairs

Ran Jian (2019)
Virginia Tech

Kamran Paynabar (2018)
Georgia Institute of Technology

Kaibo Wang (2017)
Tsinghua University

Hui Yang (2016)
Pennsylvania State University

Tirthankar Dasgupta (2015)
Harvard University

Haitao Liao (2014)
University of Arizona

Irad E. Ben-Gal (2013)
Tel Aviv University

Qiang Huang (2012)
University of Southern California

Roshan J. Vengazhiyil (2011)
Georgia Institute of Technology

Shiyu Zhou (2010)
University of Wisconsin - Madison

Satish T.S. Bukkapatnam (2009)
Oklahoma State University

Yu Ding (2008)
Texas A&M University

Jye-Chyi (JC) Lu (2007)
Georgia Institute of Technology

Jionghua (Judy) Jin (2006)
University of Michigan

Zachary Stoumbos (2005)
Rutgers University

Fugee Tsung (2004)
Hong Kong University of Science & Technology

Daniel Apley (2003)
Northwestern University

Bruce Ankenman (2002)
Northwestern University

Dariusz (Darek) Ceglarek (2001)
University of Wisconsin - Madison

QSR Former Advisory Board and International Leadership Council Members

Chid Apte
IBM Research

Russell Barton
Penn State University

John Birge
The University of Chicago

Soren Bisgaard
University of Massachusetts – Amherst

Enrique Del Castillo
The Pennsylvania State University

Dariusz (Darek) Ceglarek
University of Warwick

Abhi Deshmukh
Purdue University

Yu Ding
Texas A&M University

John English
University of Arkansas

Flavio S. Fogliatto
Federal University of Rio Grande do Sul, Brazil

Thong Ngee Goh
National University of Singapore

Douglas M. Hawkins
University of Minnesota

Kailash Kapur
University of Washington

Jack P. C. Kleijnen
Tilburg University

Soundar Kumara
Penn State University

Way Kuo
University of Tennessee

Bani Mallick
Texas A&M University

Amit Mitra
Auburn University

Kwok-Leung Tsui (2000)
Georgia Institute of Technology

Jianjun (Jan) Shi (1998 & 1999)
Georgia Institute of Technology

Douglas C. Montgomery
Arizona State University

Vijay Nair
University of Michigan

Marion R. Reynolds, Jr.
Virginia Polytechnic Institute and State University

Lawrence Seiford
University of Michigan

Jianjun (Jan) Shi
Georgia Institute of Technology

Marlin Thomas
Air Force Institute of Technology

Ajit Tamhane
Northwestern University

Kwok-Leung Tsui
Georgia Institute of Technology

William H. Woodall
Virginia Polytechnic Institute and State University

C. F. Jeff Wu
Georgia Institute of Technology

Ming Yuan
Columbia University