



# ISSX

# International Society for the Study of Xenobiotics

Volume 45

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## ISSX President's Message

By Ann Daly,  
ISSX President

My two year term of office terminates at the end of this month so this is my final ISSX President's Message. It's a pleasure to remind all members that Dr. Scott Obach, who is based at Pfizer in Groton, Connecticut, will assume the ISSX Presidency on 1st January 2022. I wish to extend a very warm welcome to him and wish him well in his new role. Scott will be very well known to many of you for his outstanding work on drug metabolism, drug-drug interactions, and drug development more generally. He has also contributed enormously to ISSX over the years. With the new additions to ISSX Council of Professors Aleksandra Galetin and Mary Paine as President-Elect and Treasure-Elect respectively, I believe the Society is in excellent shape and well placed to succeed further over the coming years.

When I assumed the Presidency in 2020, I was looking forward to a busy year steering two meetings in

Europe and the USA. Unfortunately, by March 2020 it was clear that this would not be a normal year due to Covid-19 and we sadly had to cancel both events quite close to the scheduled start dates. Following these cancellations, we were able to extend our virtual activities for members with more regular webinars together with an online North American meeting and a separate online workshop in 2021. It was excellent that many members joined the webinars and to be able to see so many of you virtually during the 2021 meeting and the workshop. With the help of the ISSX staff based in Washington DC led by Zoë Fuller, I believe we now offer a range of excellent digital resources to our members which will be improved further by use of new technology in 2022. While I hope we will meet in person in Seattle in September 2022 for the joint International meeting with the Microsomes and Drug Oxidations group, I believe we will continue to

also provide virtual events. Such events are particularly important given the international nature of our Society.



Ann Daly  
ISSX President

Before I close, I would like to acknowledge all those who have helped ISSX over the last 12 months and indeed throughout my Presidency, particularly members of Council, our various committees and our focus group leaders. Special thanks to Zoë Fuller and her team for their continued outstanding support of our activities in what has been another very challenging year. Zoë has been our Executive Director for the past year and has already proved to be an excellent appointee to this role. I also want to thank Steve Kemp, her predecessor who

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# Book Review

## **A COMPREHENSIVE TEXTBOOK ON SELF-EMULSIFYING DRUG DELIVERY SYSTEMS**

Editors; Deepak Kaushik, Ravinder Verma  
Bentham Science Publishers  
199pp. ISBN; 978-981-4998-91-7 (2021).

Following a foreword and preface, this relatively slim volume contains nine chapters constructed by fifteen contributors. The chapter titles are as follows: "Delivery methodologies for improving solubility and bioavailability," "Introduction to lipid-based drug delivery systems for oral delivery," "Self-micro emulsifying drug delivery systems (SMEDDS) and their applications," "Components of self-microemulsifying drug delivery systems," "Lymphatic transport of lipid-based drug delivery systems," "Advantages, marketed formulations and evaluation parameters of SMEDDS," "Solid-SMEDDS: Techniques of solidification and recent advancements," "Herbal self-emulsifying formulations," and "In vitro digestion models and pharmacokinetic aspects of SMEDDS."

A reasonable sized print font, tables, diagrams, and figures make for a pleasing text. A 7-page contents listing with the subject matter conveniently divided by frequent sub-headings and an extensive subject index enables easy movement around the book. For those interested in this 'niche' subject the volume certainly is worth a perusal. Check online.

## **ENZYME KINETICS IN DRUG METABOLISM**

Fundamentals and applications  
Editors: S. Nagar, U.A. Argikar, D. Tweedie  
Springer US  
881 pp. 2nd edn. ISBN: 978-1-0716-1554-6. (2021).

This hefty volume probably does not need much introduction. It is now in its 2nd edition. It is listed (remarkably) as volume 2342 in the Springer "Methods in Molecular Biology" series. This gives a clue as to its intention - to include "cutting-edge methods and

protocols" and serve "as a practical teaching tool for novice and advanced scientists (alike) interested in the fundamental concepts" of pharmacokinetics. It contains 31 chapters, too many to list, many as case studies which provide examples of practical application to clinical and research situations. Although overlap occurs, as one would expect, the chapters may be grouped into sections dealing with the principles of enzyme kinetics, enzyme and transporter structure, various modeling approaches and understanding variability both in the laboratory (experimental), and interindividual (pharmacogenetics). A sturdy construction, durable paper, readable print, and over 150 illustrations, eighty percent of these in color, make this a desirable volume for both the bookshelf and the laboratory. An ideal companion for those involved in pharmacokinetic aspects and a worthy update.

## **Book Notifications**

Steve Mitchell  
Imperial College London, UK

## **Book Ordering Information**

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#02-00 Singapore 068898 Singapore

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# 24th North American Virtual ISSX Meeting in Review

24<sup>TH</sup> NORTH AMERICAN  
**ISSX**  
MEETING

## MEETING ORGANIZING COMMITTEE

Meeting Chair: Raymond Evers, Janssen Pharmaceutica (J&J)

Meeting Co-Chair: Joseph Balthasar, State University of New York at Buffalo

## COMMITTEE MEMBERS:

Ann Daly, Newcastle University

Xiaoyan Chu, Merck & Co.

Christine Fandozzi, Merck & Co.

Lucinda Hittle, Merck & Co.

Marcel Hop, Genentech, Inc.

Amit Kalgutkar, Pfizer Inc.

Valerie Kramlinger, Novartis

Kaushik Mitra, Janssen Pharmaceutica

Bhagwat Prasad, Washington State University

Erin Schuetz, St. Jude Children's Research Hospital

Ping Zhao, Bill and Melinda Gates Foundation

Over 400 scientists, students, and exhibitors convened virtually September 14-17 for the 24th North American ISSX Meeting: Broadening Our Horizons. The meeting was co-chaired by Raymond Evers of Janssen Pharmaceutica and Joseph Balthasar of the State University of New York at Buffalo. This virtual meeting brought together individuals who are actively working on drug/xenobiotic research in diverse fields including basic and clinical pharmacology and therapeutics, toxicology, oncology, endocrinology, physiology, biochemistry, medicinal chemistry, molecular and structural biology, and genetics.

The meeting was preceded by four short courses attended by over 150 meeting registrants. The courses,

organized by the ISSX Focus Groups and the ISSX Committee on Regulatory Affairs, covered Drug Metabolism in Pharmaceutical Drug Discovery and Development; Application of Regulatory Guidances for Transporter Related DDIs; Drug Discovery and Development via PBPK Modeling; and Drug Development and Regulatory Challenges.

Tuesday, September 14 began with opening remarks from the meeting co-chairs and a keynote lecture, Janssen's Effort in the Development of a COVID-19 Vaccine, presented by Hanneke Schuitemaker of Janssen Vaccines and Prevention of J&J. Her keynote was followed by two morning parallel symposia, two afternoon parallel symposia, and time with virtual posters and exhibitors. The first full day of the virtual meeting concluded with a new investigator career networking event organized in coordination with the **ISSX New Investigators Group** which featured opportunities for student and early-career scientists to connect and network with peers and senior scientists representing the sectors of academia, industry, and government.

Wednesday, September 15 offered educational sessions with a plenary lecture, The Economics of the Pharmaceutical Industry, presented by Joseph DiMasi of the Tufts Center for the Study of Drug Development. Dr. DiMasi's talk was followed by parallel symposia, a session of ISSX Graduate/Predoctoral Poster Awards Competition presentations, time with posters and exhibits, and networking opportunities for all attendees.

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## DID YOU MISS THE 24TH NORTH AMERICAN VIRTUAL ISSX MEETING? YOU CAN ACCESS THE SESSIONS IN 2022!

In 2022, ISSX will launch a new Learning Management System which will offer access to all 2021 virtual content! Please be on the lookout for more information in 2022 about how you can access the 2021 virtual workshop, short courses, and meeting.

# 24th North American Virtual ISSX Meeting in Review

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Thursday's program included a second plenary lecture, The Projection of Drug Interactions Caused by Time-Dependent Inhibition of CYP3A, presented by Scott Obach of Pfizer, Inc. Additional sessions on Thursday included parallel symposia, a session of ISSX Postdoctoral Poster Awards Competition presentations, time with posters and exhibits, and a final networking session.

The final day of the meeting, Friday, September 17, featured an awards session honoring 2020 and 2021 **ISSX Award** recipients, parallel symposia, a plenary session, top voted poster presentations, and closing remarks from the meeting co-chairs. Learn more about the recent ISSX Awards recipients and be sure to attend the upcoming award lectures for the 2021 recipients.

## POSTER AWARDS COMPETITION

ISSX encourages high-quality research and recognizes distinguished poster presentations by young scientists in both the graduate/predoctoral and postdoctoral categories during the meeting. All posters accepted as finalists in the competition were reviewed and rated by the Poster Awards Committee on the basis of Significance of the Research Problem; Experimental Approach; Soundness of Conclusions; and Clarity of Presentation. The award recipients were:

### Graduate/Predoctoral Awards

FIRST PLACE: **Colten Eberhard** of Johns Hopkins University School of Medicine, Pharmacology and Molecular Sciences, Baltimore, Maryland, USA for the poster A4 entitled "NATURALLY OCCURRING MUTATIONS IN CREATINE KINASE BRAIN-TYPE REDUCE THE FORMATION OF TENOFOVIR-DIPHOSPHATE *IN VITRO*"

FIRST PLACE: **Lianne Stevens** from TNO, Human Cell Biology, Utrecht and Leiden, Netherlands for the poster A5 entitled "NORMOTHERMIC MACHINE PERFUSION OF DISEASED EXPLANTED LIVERS TO STUDY HEPATIC PHARMACOKINETIC PROCESSES."

THIRD PLACE: **Janice Goh** of UCSF, San Francisco, California, USA for the poster A1 entitled "THE HUMAN GUT MICROBIOME IMPACTS CYP3A4 EXPRESSION AND FUNCTION."

### Postdoctoral Awards

FIRST PLACE: **Nicolò Milani** of Hoffmann-La Roche, Basel, Switzerland for the poster A7 entitled "GUT-LIVER ORGAN ON A CHIP COMBINED WITH IN SILICO MODELLING AS A PROMISING TOOL FOR INVESTIGATION OF MYCOPHENOLATE MOFETIL PHARMACOKINETICS."

SECOND PLACE: **Nicola Melillo** of The University of Manchester, Manchester, United Kingdom for the poster A10 entitled "LIVER IMAGING-INFORMED PBPK MODELLING FOR PREDICTION OF TRANSPORTER-MEDIATED DRUG-DRUG INTERACTIONS."

THIRD PLACE: **Mayur K. Ladumor** of the University of Washington, Seattle, Washington, USA for the poster A8 entitled "PREDICTING REGIONAL RESPIRATORY TISSUE AND SYSTEMIC CONCENTRATIONS OF ORALLY INHALED DRUGS THROUGH A NOVEL PBPK MODEL."

*Congratulations to all of the graduate/predoctoral and postdoctoral award finalists and winners.*

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# 24th North American Virtual ISSX Meeting in Review

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Poster networking and presentation sessions were held throughout the meeting and provided over 130 authors with the opportunity to present their research on a virtual international stage. [View the abstracts and virtual posters online.](#)

The Society is grateful to the meeting co-chairs, the organizing committee, session chairs, group volunteers, speakers, exhibitors, sponsors, and all attendees who made this meeting possible.

**ISSX THANKS THESE SPONSORS FOR THEIR GENEROUS SUPPORT  
OF THE 24TH NORTH AMERICAN VIRTUAL ISSX MEETING:**



# Renew Your ISSX Membership for 2022

Thank you for your membership and support of ISSX this year!

We urge you to remain a part of the premier international association that advances research and education on the interplay of living systems with medicines and chemicals for the benefit of society worldwide by renewing your ISSX membership today.

As in 2020, the COVID-19 epidemic was a change-driver for the Society, causing us to examine and explore our offerings for our members. This year, we again presented a large number of webinars on many topics to connect with our members and offer both scientific content as well as educational material. **The ISSX Webinar Series** is a free benefit of Society membership. Many of the 2021 webinars were organized by the **ISSX Focus Groups** who have been a source of engagement and outreach for members over the last several years. The Focus Groups provide an excellent forum for scientific discourse and they will be more and more involved with organizing sessions at future ISSX meetings. Some share information with their members via a regular Newsletter.

- **Biotransformation Mechanism and Pathways Focus Group**
- **Bioanalysis in ADME Science Focus Group**
- **Modeling and Simulation Focus Group**
- **Transporters Focus Group**

In addition, the **New Investigators Group** has been incredibly active in presenting a career networking session for the 24th North American ISSX virtual Meeting and by providing connection with fellow early career scientists to share experiences and tips. The **ISSX Mentorship Program**, which connects early career scientists with experienced colleagues to provide career advice and discuss career options, is another benefit of membership. Finally, ISSX members benefit from steep discounts to our highly-rated scientific workshops, short courses, and meetings where they learn about the latest research developments, network with leaders in the field, and present their research in multiple forums.

We are looking forward now to 2022 and we hope to greet you at both our virtual and in-person events. **The Modeling and Simulation Focus Group** is currently organizing a virtual workshop, which is to be held in June—this will be our second virtual workshop following the successful ISSX and IQ Consortium Workshop that was held earlier this year. We believe this will be another great opportunity for members to connect and learn. Additionally, ISSX is planning a joint meeting with the Microsomes and Drug Oxidations (MDO) which will be held in person in Seattle, Washington September 11–14. Please save the dates and make plans to join us! In addition, the ISSX Webinar Series, Focus Groups, New Investigator Group and Mentorship Program will continue with great energy—all free benefits from society membership.

Please follow the steps below to complete your renewal:

1. Visit [issx.org/renew](https://issx.org/renew).
2. On the right-hand side of the page, log in with your ISSX username and password. If you do not know your username or password, you may re-set it by visiting [issx.org/password](https://issx.org/password).
3. Click RENEW YOUR MEMBERSHIP NOW in the blue box at the top of your profile page.
4. On the next screen, review and update your contact information to ensure uninterrupted communication from ISSX.
5. Once you verify your contact information, you will be directed to the payment screen, where you may view your renewal options, including instant payment online via credit card.

• If you would like to pay by check, select "Bill Me" under Payment. You can access your invoice on the subsequent page and it will be automatically sent to you via email. Please print the invoice and submit it with your check to:

**ISSX**  
**8652 Solution Center**  
**Chicago, IL 60677-8006**

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# Renew Your ISSX Membership for 2022

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ISSX members have access to a variety of exclusive benefits including:

- **Reduced registration fees** for all ISSX meetings and workshops;
- Access to join and engage with the four **ISSX Focus Groups**;
- **Online learning opportunities** such as the ISSX Webinar Series, which feature world-renowned speakers and cutting-edge science;
- **A subscription to the ISSX Newsletter** that highlights Society news, member spotlights, late-breaking scientific news, and much more;
- **The opportunity to submit and present scientific abstracts** at ISSX workshops and meetings;
- **Eligibility to apply for and receive travel grants** to attend ISSX meetings;
- **The chance to hold office, serve on a committee, and vote in ISSX elections**;
- **Free Enrollment into the ISSX Mentorship Program** that pairs young investigators with senior scientists with related interests;
- And more!

Your membership indicates support of our mission to advance research and education on the interplay of living systems with medicines and chemicals for the benefit of society worldwide and helps sustain our program of operations. **Visit [issx.org/renew](https://issx.org/renew) today!**

If you have questions about renewing your membership or membership benefits, please contact ISSX by phone at +1-202-367-1160 or by email at [information@issx.org](mailto:information@issx.org).

## DONATIONS

ISSX relies on assistance from members and other individuals as well as corporate entities to advance our mission. If you would like to make a gift to ISSX, please visit [www.issx.org/donations](https://www.issx.org/donations) to learn about the various funds you can support.

ISSX is a 501 (c)(3) organization incorporated in the United States. As such, your contribution may qualify for a tax deduction. Consult your tax advisor for full information. Our federal tax identification number is 22-2432063. If you need a copy of our federal W-9 form, simply email [information@issx.org](mailto:information@issx.org) and we will promptly reply.

## ISSX President's Message

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still acts in a consultant role for the Society, for his help and support especially during difficult times in 2020.

While I appreciate that there are still Covid-19-related public health challenges and that we need to continue

to be cautious, I hope it will be possible to see many of you in person in 2022. In the meantime, my warm wishes to you and your families for a happy and relaxing holiday season and a successful 2022.

# Enroll in the ISSX Mentorship Program for 2022!

## CALLING ALL ISSX MEMBERS!

The ISSX Mentorship Program pairs young investigators with senior scientists within and across career pathways to discuss career options, review competencies for success, consider challenges and problems, and receive practical advice from experienced scientists. This program is an exclusive member benefit that has seen great success since its inception.

## THE 2022 MENTORSHIP CYCLE WILL RUN FOR 12 MONTHS AND ISSX WILL BEGIN MAKING MATCHES IN JANUARY 2022.

The program matches mentors and mentees based on an award-winning algorithm. From there, the pairs have the flexibility to define their conversation topics to best suit the needs of their relationship. Past participants noted their focus was individual and career development, collaboration, and leadership. Milestones are set along the way for participants to review their desired outcomes of the mentorship, set goals, and provide progress updates.

## WHAT DID PREVIOUS ISSX MENTORSHIP PROGRAM PARTICIPANTS SAY?

*"[My mentor] has been particularly helpful in discussing which traits and competencies that I'll need to further develop to prepare me for my next career moves. In particular, the discussions on understanding how to be a good leader vs a good manager and how each is important. I have enjoyed our conversations and feel that this program has been a valuable experience for me."*

*"I was at a cross section of taking two completely different career paths when I started the program. [My mentor] helped me navigate through this process with thorough introspection and strength identification. Not only did I find my career direction but also who I am. She boosted my confidence and inspired me to reach my greatest potential. I feel so lucky to be her mentee!"*



**ISSX**  
MENTORSHIP  
PROGRAM

*"I always look forward to chatting with [my mentor]. I find her very approachable and easygoing. Additionally, she has great advice to give when I present her with something I am struggling with. It is not always easy to find a mentor you feel comfortable with. However, I think this is a great match. I look forward to our next few months in the mentorship program!"*

ISSX thanks past participants for their work and dedication to this initiative and we invite you to re-enroll in the program so that you may continue growing personally and professionally.

## SIGN UP TODAY!

If you are interested in joining as a mentor or a mentee, please visit [www.issx.org/ISSXMentorship](http://www.issx.org/ISSXMentorship) to learn more.

ISSX will provide resources to help you launch and sustain effective mentoring relationships. Mentoring is a personal and professional development experience that challenges one to reflect on their own actions and behaviors over time. For those who have benefited from a helpful mentor in their lives or careers, there is often a strong drive to pay this forward to others by serving in the same role.

Finding a true mentor is not always easy. The ISSX Mentorship Program can help and we are proud to offer this valuable resource and opportunity for new relationships, skills, and conversations to develop.





# The ISSX Webinar Series

## ABOUT THE ISSX WEBINAR SERIES

The ISSX Webinar Series is an engaging and innovative way to hear from and interact with speakers from around the world on a range of topics related to the metabolism and disposition of xenobiotics. Members can participate for free. Participate in regularly scheduled live webinars with an exciting range of speakers, as well as watch previous webinars on your own schedule.

ISSX webinars are presented by internationally recognized scientists on a variety of subjects relevant to the field. The ISSX Continuing Education Committee is charged with the responsibility for reviewing these educational offerings and setting the webinar schedule.

## MARK YOUR CALENDAR FOR THIS UPCOMING ISSX WEBINAR

### January 2022

January 25, 2022 at 11:00 AM ET (16:00 UTC)  
**Leveraging a Global Network of Colleagues to Drive Cutting Edge PK-ADME Science**

*Presented by Dr. David A. Rodriguez, Ph.D., Pfizer*

As a pharmaceutical company, Pfizer has a long-standing tradition of executing quality translational PK-ADME (Pharmacokinetics-Absorption-Distribution-Metabolism-Excretion) science in support of its portfolio. In recent years, this has extended to the development and deployment of solute carrier (SLC) biomarkers and plasma (serum)-derived tissue specific small extracellular vesicles (sEV) as liquid biopsy. Such advances have been possible because Pfizer's Medicine Design organization (PDM & ADME Sciences) is well staffed with PK-ADME experts (e.g., bioanalytical, enzymology, transporters, modeling & simulations) and because of effective partnerships with colleagues in the Precision Medicine Group and Clinical Pharmacology. Beyond its internal network, Pfizer has also supported funded research collaborations with esteemed academic colleagues across the globe. The presentation will highlight three such collaborations.

The first example involves Dr. Andrew Rowland, and his lab at Flinders University (Adelaide, SA Australia, Australia), and focuses on ADME proteomics of blood-derived sEV as liquid biopsy to support induction

assessment, subject phenotyping and tissue expression profiling. The second example showcases exploratory plasma-based biomarkers for liver organic anion transporting polypeptides (OATP1B1/3) and urine-based biomarkers for organic cation transporters (OCT2, MATEs) in collaboration with Prof. Hiroyuki Kusunohara and his lab (Tokyo University, Tokyo, Japan) and Prof. Yuichi Sugiyama (while at the Riken Institute). Specially, Pfizer funded two clinical studies at the P-One clinic (Tokyo) that enabled the assessment of SLC inhibition by a perpetrator at 3 dose levels (OATP, rifampicin; OCT2/MATE, pyrimethamine). The biomarker project extended to a collaboration with Dr. Mikko Niemi, and his lab at the University of Helsinki and HUS Diagnostic Center, Helsinki University Hospital, Helsinki (Finland), involving the investigation of plasma glycochenodeoxycholic acid 3-O-glucuronide (GCDCA-3G) as a novel OATP1B1 (SLCO1B1) phenotyping tool. Finally, Pfizer's collaboration with Dr. Colin Brown and his lab at Newcells Biotech (Newcastle, England), and Dr. Jashvant Unadkat and his lab (University of Washington, Seattle, USA), is highlighted. In this instance, it was possible to leverage freshly isolated multi-subject human primary renal proximal tubule epithelial cells to investigate the active uptake of creatinine by organic anion transporter 2 (OAT2) versus OCT2.

**Additional webinars will be announced soon!** Check the **ISSX webinar schedule** to stay in the know on upcoming scientific lectures and discussions.

**Did you miss a recent webinar?** Sign into your ISSX membership account and view all past webinars [here](#).

### Do you have an idea for a webinar? Submit a Proposal to Present for the ISSX Webinar Series

We want to hear from you! Complete a brief form online to **submit your proposal today**. The information presented in the ISSX Webinar must be balanced and provide the attendee with an objective viewpoint. Proposals for the ISSX Webinar will be evaluated for the ability to provide educational content to ISSX members. The scientific content (merit) of the webinar is subject to review and prior approval by the ISSX Continuing Education Committee (CEC) is needed before proceeding.

# Changes to the ISSX Council

As we approach the end of 2021, we wish to thank two ISSX Council members for their terms of service with ISSX.



**Ann K. Daly, ISSX President**  
Newcastle University, Newcastle  
Upon Tyne, United Kingdom

Dr. Ann K. Daly's first degree was a B.A. in Biochemistry from the University of Dublin (Trinity College), Ireland. After a Ph.D. in Biochemical Pharmacology at Trinity College

under the supervision of Dr. Tim Mantle, she undertook postdoctoral research at the Universities of Geneva (Switzerland) and Newcastle (UK). In 1989, she joined the Newcastle University Pharmacogenetics Research Group, becoming Professor of Pharmacogenetics in 2004.

Dr. Daly's research career has focused on various aspects of xenobiotics starting with biochemical studies concerned with aldo-keto reductases during her PhD, followed by studies on retinoids, particularly on their mechanism of action and metabolism, as a postdoc. Her background in metabolism led to studies on cytochrome P450 pharmacogenetics, initially focusing on the molecular basis of the CYP2D6 polymorphism. She contributed to the identification of variant alleles and development of a nomenclature system for CYP2D6 and other CYP alleles. Recent research achievements include demonstration of the importance of CYP2C9 and VKORC1 genotypes in determining warfarin dose requirement and pharmacogenomic studies on drug-induced liver injury that show that immunogenetic factors, particularly HLA genotypes, are key predictors of risk. She continues to pursue her research interests in genetic and mechanistic aspects of liver diseases relating to xenobiotic and endogenous compounds. She has authored over 250 publications and is a member of a number of journal editorial boards.

Ann has been a member of ISSX since 1992. She was a member of ISSX Council for four years from 2012 to 2015 and Meeting Organizing Committee Co-chair for the 2015 European ISSX Meeting in Glasgow, Scotland. She also received the 2017 ISSX European Scientific Achievement. In 2018, she was appointed President-Elect and has been ISSX President since January 2020.



**Erin Schuetz, ISSX Treasurer**  
St. Jude Research Hospital,  
Memphis, Tennessee, United States

Dr. Erin Schuetz is a Full Member in the Department of Pharmaceutical Sciences at St. Jude Children's Research Hospital in Memphis, Tennessee. Dr. Schuetz obtained her

B.S. degree in Biology from St. Mary's College in Notre Dame, Indiana and her Ph.D. in Pathology from the Medical College of Virginia/Virginia Commonwealth University (MCV/VCU). Dr. Schuetz joined the Dept. of Pathology at MCV/VCU as an Assistant Professor in 1987, and moved to St. Jude Children's Research Hospital in 1993.

Her particular area of research interest involves using genetic, molecular and cell biological techniques to study the mechanisms underlying human variation in drug efficacy, drug toxicity and therapeutic outcome. The ultimate goal of her laboratory work is to improve understanding of human variation in drug response and to ultimately use that information to better guide drug therapies to see that every patient gets the right dose of the right drug. Other areas of her research focus include regulation of CYP3A and PXR, the interplay of drug transporters with nuclear hormone receptors and drug metabolizing enzymes, and the role of leptomeningeal and choroid plexus drug transporters to the CSF disposition of transporter substrates.

Dr. Schuetz has 179 publications. Three of her papers (2001, 2009 and 2013) received the James R. Gillette Drug Metabolism and Disposition Best Paper in the Drug Metabolism Division of ASPET, and her paper in 2002 in Pharmaceutical Sciences received the AAPS Meritorious Manuscript Award. Dr. Schuetz achieved ISI Highly Cited in Pharmacology designation – which is awarded for publishing highly influential research (Less than one half of one percent of all publishing authors meet the criteria for inclusion). This is also illustrated by the following publication metrics: Through June 2012, her H-index was 64, with an average citation of 85.9 citations per publication.

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## Changes to the ISSX Council

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Dr. Schuetz is a long-standing active member of ISSX (since the 1990s) and served as Treasurer on the ISSX Council. She has co-chaired and helped organize ISSX workshops, short courses, sessions, and presented numerous times at ISSX. Other ISSX activities include

member of ISSX Nomination Committee and Meeting Organizing Committees.

*ISSX is thankful to each of these individuals for their dedication, service, and commitment to the Society.*

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# Save the Date: The 24th International Symposium on Microsomes and Drug Oxidations and 13th International ISSX Meeting

The Westin Seattle • Seattle, Washington, USA • September 11–14, 2022

### Meeting Chairs

*Michael Zientek (ISSX) and Xiaobo Zhong (MDO)*

### Meeting Organizing Committee

Nemandje Bumpus, Johns Hopkins University

Mike Coughtrie, University of British Columbia

Xinxin Ding, University of Arizona

Barry Jones, Pharmaron

Miki Nakajima, Kanazawa University

Scott Obach, Pfizer

Masayo Oishi, Astellas Pharma

Allen Rettie, University of Washington

Damjana Rozman, University of Ljubljana, Slovenia

Emily Scott, University of Michigan

Aiming Yu, University of California at Davis

**Program, Registration, and Abstract Submission details to be announced in January 2022!**

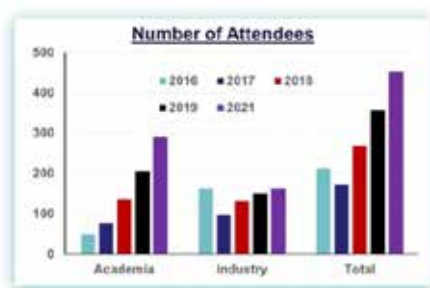
Watch for more information coming soon!



# 5th Annual Virtual Conference of Indian Society for the Study of Xenobiotics (SSX-2021)

Indian Society for the Study of Xenobiotics (SSX-India) organized 5th Annual conference virtually, from 14th to 17th July 2021 with the theme of “Emerging trends in ADMET science in drug discovery and development”.

SSX India is growing each year and has been a great success for the last six years. Each year number of participants has been increasing and this year, 452 participants attended the conference, especially with an increased participation from academia.



The key features of the conference were four keynote talks; poster sessions; oral presentations by young investigators and mentorship programme. There

were twenty scientific talks by speakers from academia and industry of different countries; five sponsors' talk and six presentations from young investigators.

Review summaries of the short courses, plenary lectures, parallel sessions, and poster presentations on the **ISSX website** at [www.issx.org/ssxindia2021](http://www.issx.org/ssxindia2021).

## POSTER SESSION

There has been a huge interest for submission of abstracts for poster presentation. Totally 102 abstracts were finally selected after screening by the scientific committee members. The abstracts were categorized into various topics related to drug discovery and development, viz., 19 abstracts in ADME; 34 abstracts in formulation development; 28 abstracts in pharmacology and toxicology and 18 abstracts from other interdisciplinary studies. A panel of adjudicators from industry and academia evaluated the posters and selected four best e-posters with certificates and cash prizes. Below is the list of best posters.

- Mr. Amol Bisen, CSIR-CDRI, Lucknow India
  - Development of sustained release liposomal formulation of amphotericin B against invasive fungal keratitis and its PK-PD analysis
- Ms. Anusha Saraswathi D S, M.S. Ramaiah University, Bangalore
  - “Preparation, characterization and in-vitro cell viability assay of ginsenoside nanoformulation”.
- Mr. Deepak Ahire, College of Pharmacy and Pharmaceutical Sciences, Washington State University (WSU), Spokane, WA
  - Human liver microsomes data overpredict interindividual variability in drug-metabolizing enzymes: Implications for PBPK modelling”.
- Mr. Gautam Vijaywargi, NIPER, Mohali
  - Studying the effect of genetic polymorphism on the pharmacokinetics of cyp2d6 substrate propafenone using PBPK modelling”.

## YOUNG INVESTIGATOR PRESENTATION

Six best abstracts were selected for the oral presentation by the students. Ms. Abira Dey (Annotation Analytics Pvt. Ltd, Haryana, India); Mr. Bhim Bahadur Chaudhari (Manipal College of Pharmaceutical Sciences, India); Ms. Priya Sharma (Amity University, Noida, India); Mr. Ansari Mohd Faraz Zubair Md Mukhtar Ahmed (M.S. Ramaiah University of Applied Sciences, India) ; Dr. Manisha Bhateria (CSIR, IITR Lucknow) and Ms. Varsha S R (M.S.Ramaiah University of Applied Sciences, India) have presented their research to a diverse audience and received constructive feedback to help better their research careers. Juries assessed the six presentations and awarded a certificate and cash prize to the two best presenters. The following were the winners for oral presentation:

- Dr. Manisha Bhateria, from CSIR, IITR Lucknow for her presentation on “Predicting the in vivo developmental toxicity of fenarimol in rats and humans from *in vitro* toxicity assay using PB/TK modelling facilitated reverse dosimetry approach”

*Continued on next page*



# 5th Annual Virtual Conference of Indian Society

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- Mr. Bhim Bahadur Chaudhari from Manipal College of Pharmacy, India presented Development of a DBS based analytical method for quantification of Cefotaxime: Applicable for pharmacokinetic evaluation in neonates”.

Both poster session and young scientists' presentations were effectively coordinated by Drs. Sachin Tulsankar, Anoop Kumar and Amol Raje.

## MENTORSHIP PROGRAM

Mentorship program was conducted to help students to get started with research career in the ADME-Tox sciences. Students registered in the mentorship program based on the research interest were paired

with mentors who are either renowned conference speakers or senior scientists from industry or academia. The agenda was coordinated by Mr. Shashyendra Singh Gautam.

## RAFFLE CARD LUCKY DRAW AND VOTE OF THANKS

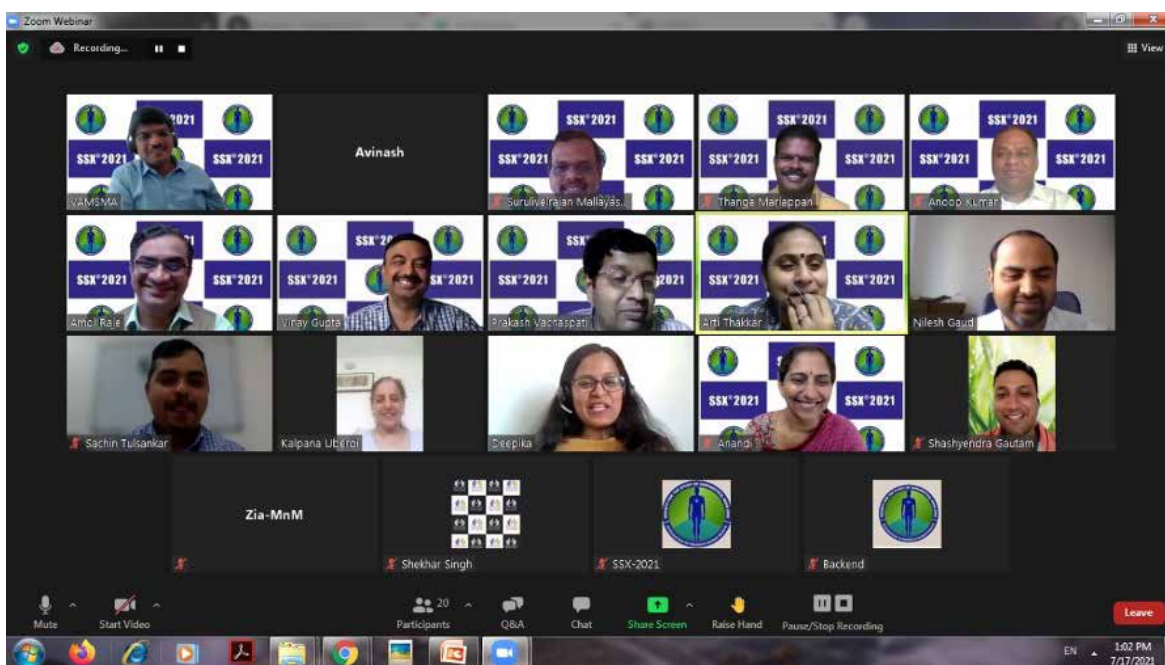
Delegates were encouraged to drop the raffle card along with their feedback about the conference. At the end of 4th day Session, two raffle cards were picked up from the participants randomly. Winners of the raffle card lucky draw has announced and bestowed with their amazon voucher Rs 5,000 each. This was followed by vote of thanks presentation by Dr Vamsi Madgula and he announced the forthcoming certificate course on DMPK to the delegates.

## MEETING CHAIR

T. Thanga Mariappan, Ph.D., President, SSX, India  
Scientific Director, Bristol Myers Squibb India, Bangalore, India.

## MEETING ORGANIZING COMMITTEE

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Vamsi Madgula  
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## ONGOING AND FUTURE EVENTS OF SSX-INDIA

- Certification Course of DMPK, August to December, 2021: To provide basic understanding of DMPK concepts, techniques and applications of preclinical to clinical translation; Webinar based training programme for 40 hours over 5 months
- Asia Pacific ISSX Meeting, 1Q, 2023: 7th AP-ISSX has been scheduled at Bangalore, India

## CONFERENCE INAUGURATION



## CONFERENCE PLATFORM





# ISSX Focus Groups

ISSX Focus Groups provide ISSX members with a great opportunity to network with your colleagues while discussing topics relevant to the day. Your participation in the ISSX Focus Groups help us to enhance the exchange of the most current scientific research information and open doors to endless opportunities for collaboration and career advancement. View the latest from the ISSX Focus Groups and join today!

## BIOANALYSIS IN ADME SCIENCE

The aims of this group include: (a) to promote state-of-the-art analytical technologies to solve challenging issues faced in ADME studies and bioanalysis, (b) to enable industrial scientists to actively contribute to and participate at ISSX meetings and associated activities, and (d) to enhance synergy between industrial scientists and academic researchers.

## BIOTRANSFORMATION, MECHANISMS, AND PATHWAYS

Points for discussion include: (a) metabolism-directed drug design (e.g., incorporation of D to reduce metabolic liability), (b) mechanisms underlying biotransformations that yield “unusual” metabolites and characterization of the metabolizing enzymes responsible for their formation, and (c) idiosyncratic immune-mediated toxicity via metabolism (e.g., reactive metabolites).

## MODELING AND SIMULATION

This group focuses on the role of modeling and simulation in drug development in all stages, including topics such as (a) translational extrapolations from preclinical data to clinical expectations, (b) drug-drug interactions, (c) extrapolations of PK/PD data to special populations, (d) early dose optimization, and (e) selection of doses for clinical testing.

## TRANSPORTERS

The goals of this focus group are to disseminate and promote state-of-the-art research and foster collaborations among ISSX members on the role of transporters in drug disposition, drug interactions, efficacy, and toxicity, and their impact on drug discovery, development, and regulatory decision making.

## Save the Date

### The 24h International Symposium on Microsomes and Drug Oxidations and 13th International ISSX Meeting

The Westin Seattle • Seattle, Washington, USA • September 11–14, 2022

#### MEETING CHAIRS

Michael Zientek (ISSX) and Xiaobo Zhong (MDO)

#### MEETING ORGANIZING COMMITTEE

Nemandje Bumpus, Johns Hopkins University  
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Masayo Oishi, Astellas Pharma  
Allen Rettie, University of Washington  
Damjana Rozman, University of Ljubljana, Slovenia  
Emily Scott, University of Michigan  
Aiming Yu, University of California at Davis



**Program, Registration, and Abstract Submission details to be announced in January 2022!**  
Watch for more information coming soon!

# Welcome New Members

The International Society for the Study of Xenobiotics proudly welcomes the following new members. We greatly appreciate their support and hope that each remains aligned and affiliated with ISSX for many years to come.

## 2021 NEW MEMBERS

**Armina Abbasi**, AMGEN,  
South San Francisco,  
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**Georges Da violante**, Servier,  
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**Daniel Duran**

**Ko Kyung Na**

**Floriane Lignet**, Merck KGaA,  
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Darmstadt, Hessen, Germany

**Tam Nguyen**, Taipei Medical  
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**Abhinav Sharma**, Abbvie Inc., North  
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