ISSX International Society for the Study of Xenobiotics

Volume 45 Issue 1, 2021

ISSX President's Message

By Ann Daly,
ISSX President

Firstly, belated New Year's greetings to all ISSX members. I believe 2021 will be an exciting and productive year for the Society, despite current challenges from COVID-19. I would like to warmly welcome all those who have joined us in the last few months as well as thank members who have renewed their membership recently. ISSX Council has been refreshed for 2021, and I would like to welcome our new members Simone Schadt (Roche, Basel, Switzerland), our new European councillor, and Kouichi Yoshinari (University of Shizuoka, Japan), our new Asia-Pacific representative. They replace Alex Galetin (Manchester, UK) and Eric Chan (Singapore) who have now completed their terms. My sincere thanks to Alex and Eric for their substantial contributions to the work of Council and ISSX generally during their periods of office. It has been great to work with you both. We are currently in the process of updating our committee memberships with more details to follow on this in subsequent newsletters this year.

We have two major meeting activities timetabled in 2021. In early March, we held our first extended virtual meeting, the ISSX/IQ Virtual Workshop: Translation of *in vitro* ADMET Science to *in vivo*: Current Perspectives and Challenges chaired by Christopher Gibson (Merck) and Lei Zhang (FDA). This ran for four days from Tuesday March 2 to Friday March 5. This was a great opportunity for many of our members worldwide to join a workshop without having to travel long distances and incur high travel costs. There will be a summary of this workshop within this newsletter.

The second main activity is the 24th North American ISSX Meeting in September which is currently scheduled to take place in Boston from September 12 to 15. We will open this meeting for registration and abstract submission once we have made the final decision on whether the meeting should be a virtual or in person event. Meeting Chairs, Raymond Evers and Joe Balthasar have assembled an exciting program which will be stimulating and informative for all, regardless of delivery mode. Updates will follow by email and on our website!

Ann Daly
ISSX President

The other important activity during 2021 is our webinar program. This worked very well during 2020, and we had some great talks followed by stimulating Q&A sessions. Importantly, webinars are free to members and continue to be available on our website as a valuable member benefit. The 2021

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Book Review

BIOLOGICALLY ACTIVE NATURAL PRODUCTS
Microbiological Technologies and Phyto-Pharmaceuticals in Drug Development
Editors: D.K. Mahapatra, S.G. Talele, T.G. Volova, A.K. Haghi
CRC Press (Routledge), Taylor & Francis
322 pp, ISBN: 978-1-771-88904-9. (2021)

The exploitation of natural products that show biological activity has often been the starting point for the development of therapeutic agents. Many substances have entered extensive medicinal practice without undergoing much modification, perhaps only a slight chemical tinkering. The plant world has furnished many extracts that have been become a foundation stone of traditional medicine for centuries. Mentioned and explored within the present text are compounds from the gum arabic tree and the neem tree. The succulent species of the Aloe genus. The alkaloid-rich plant, crape jasmine (pinwheel flower), and ß-silosterol isolated from the Indian mallow. Perhaps more well-known is the *Artemisia*, a large genus of herbaceous plants and shrubs belonging to the Asteraceae family and containing terpenes that impart bitter tastes and strong odours. Familiar members of this group are the common mugwort and wormwood, the latter infamous for containing thujone. Microorganisms have also provided a treasure trove of potential (and actual) therapeutic agents and these too are commented upon.

The brief descriptive information advanced in the associated publicity about the potential readership of the book cites, "scientists, faculty and graduate students" as a catchment area. It should be ideally suitable for these groups and also others that have an interest within this fascinating field of plant-derived pharmaceutical products. It is accepted that a basic understanding of principles and a previous introduction to some of the aspects covered within the book would be an advantage but a lack should not be viewed as a hindrance. It is also stated that "students will gain a unique insight into nanotechnology and natural pharmaceuticals today with practical implementation in various industrial sectors." This volume is a certain benefit and provides useful insights for those who are about to embark, or thinking of embarking, upon a career in this direction. It is also a useful update for those already familiar with this diverse field.

Twenty or so authors have come together to produce ten interesting chapters, the titles of which are listed as follows. "*Azadirachta indica*: Imperative mini-opinions on an ethnopharmacological savior," "Arsenals of pharmacotherapeutically-active proteins and peptides: Old wine in a new bottle," "Biotechnological potential of hydrogen oxidizing bacteria," "*Abutilon indicum, Prosopis juliflora*, and *Acacia arabicaas* antibacterial agents against *Xanthomonas axonopodis* Pv. Punicae," "Microbial biotechnology: Synthesis, production, challenges and opportunities," "Pharmaceutical natural and synthetic colorants, pigments, dyes, and lakes: Applications, perspectives, and regulatory aspects," "Microbial pigments: A green microbial technology," "Ethnopharmacological perspectives of the traditional herb *Tabermontana divaricate* Linn.," "A closer view on various reported therapeutically active formulations containing Aloe vera (*Aloe barbadensis*)," "Sesquiterpenes in Artemisia and development of drugs from Asteraceae."

Notified by

Steve Mitchell
Imperial College London, UK

Book Ordering Information

Apple Academic Press Inc.
1265 Goldenrod Circle NE
Palm Bay, Florida 32905, USA

USA Taylor & Francis Group
52 Vanderbilt Avenue
New York, NY 10057

Rest of World Taylor & Francis Group
3 Park Square
Milton Park, Abingdon
Oxfordshire OX14 4RN
UK

ISSX Workshop: "Translation of *in vitro* ADMET Science to *in vivo*: Current Perspectives and Challenges"

The ISSX/IQ Workshop, Translation of *in vitro* ADMET Science to *in vivo*: Current Perspectives and Challenges, was held virtually March 2–5, 2021. The workshop, co-chaired by Christopher Gibson (Merck) and Lei Zhang (FDA), was heldin a virtual space for nearly 300 attendees and speakers to learn, connect, and network.

The four day workshop aimed to bring together scientists from academia, industry, and regulatory agencies to discuss contemporary topics in applied small molecule enzyme and transporter research. The virtual format of this workshop allowed for interaction and discussion between attendees, speakers, and poster authors through breakout rooms, panel discussions, and interactive poster sessions. Through each of the four daily sessions, topics covered not only laboratory and analytical challenges associated with studying enzymes and transporters *in vitro*, but also challenges and potential solutions/best practices in translation of *in vitro* ADMET data to *in vivo* drug disposition and clinical drug-drug interactions (DDIs). All presentations, slides, panel discussions, and Q&A have been made available to attendees to review at their leisure now that the workshop has concluded.

The workshop began on Tuesday, March 2 with Session One, “Biological, Experimental and Methodological Challenges Associated with the Study of Drug Metabolizing Enzymes.” This session was chaired by Christopher Gibson and Adrian Fretland. Presenters included Yingying Guo, Faraz Kazmi, Renu Singh, Edward Kelly, Kanika Choughule, and Joanne Donkers.

Session Two, “Biological, Experimental and Methodological Challenges Associated with the Study of Drug Transporters," was chaired by Aleksandra Galetin and Laurent Salphati. Session Two speakers included Jashvant Unadkat, Xiaoyan Chu,Yurong Lai, Laurent Salphati, Laura Francis, Mengyue Yin, and Zsuzsanna Gaborik.

Session Three, “Using *in vitro* Enzyme and Transporter Data in Translational Models of Human Pharmacokinetics, Dose and DDI,” was held on Thursday, March 4. This session was chaired by Jashvant Unadkat and Kimio Tohyama. Marcel Hop, Aleksandra Galetin, Kunal Taskar, Aditya Kumar, Manthena Varma, Flavia Storelli, and Bo Feng presented.

On the final day of the workshop, Lei Zhang and Yurong Lai co-chaired Session Four, “Using *in vitro* Enzyme and Transporter Data in the Prediction of Drug-drug Interactions.” Speakers in this session included Niresh Hariparsad, Venkatesh Pilla Reddy, Elin Lindhagen, Xinning Yang, Hiroyuki Kusuhara, Tamara Cabalu, and Diane Ramsden.

At the end of each daily session, attendees were invited to attend poster presentations as well as networking meetups. For the virtual posters, presenters were rotated between moderated session rooms to allow for productive conversations and questions. Several poster authors also pre-recorded presentations for those who would be unable to attend the afternoon sessions. Afternoon networking sessions placed attendees into small virtual rooms to allow for more personal connections.

ISSX appreciates the commitment and efforts of the Workshop Organizing Committee, speakers, poster presenters, and attendees who all made this endeavor a remarkable success.

ISSX also thanks Genentech, a member of the Roche Group, for their support of this workshop.

Renew Your ISSX Membership for 2021

Thank you for your membership and support of ISSX!

If you haven't yet renewed, 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.

The **ISSX Webinar Series** is one of our most popular benefits of membership and provides members with the opportunity to learn about a variety of topics presented by leaders in the field. The **ISSX Focus Groups** provide an excellent forum for scientific discourse, and members are encouraged to join one or all four groups. In addition, the **New Investigators Group** is very active and this group provides an excellent way to connect with fellow early career scientists to share experiences and tips. Another point of connection for members is the **ISSX Mentorship Program**, which links early career scientists with experienced colleagues to provide career advice and discuss career options. Finally, ISSX members benefit from steep discounts to our highly-rated scientific meetings where they learn about the latest research developments, network with leaders in the field, and present their research in multiple forums. Please make plans to attend the **24th North American ISSX Meeting** this September.

Please follow these five steps to complete your renewal:

1. Visit **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**.

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
  USA

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**.

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** 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** and we will promptly reply.

ISSX President's Message

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program is being updated regularly, but upcoming content currently includes talks from our 2020 North American ISSX Award winners Dhaval Shah (State University of New York at Buffalo), Edna Choo (Genentech), and K. Sandy Pang (University of Toronto). Kathy Giacomini (UCSF) and Mary Paine (Washington State University) will present in May and June. Additionally, on March 16, Eddie Morgan (Emory University) presented a webinar entitled "Inflammatory Regulation of P450 enzymes: implications for drug metabolism in the time of COVID-19." If you didn't watch live, the webinar recording is now available on the ISSX website. This brings us back to COVID-19 which is an important topic for all of us. I think Eddie's talk is very timely, especially in view of the important contribution ISSX members are making to drug and vaccine development in this area as well as performing studies on many other aspects of the disease. Traditionally, infectious disease has not received very much coverage at our meetings, but we will include speakers on COVID-19 at the 24th North American event and probably in future meetings also.

We continue to run our awards program for distinguished contributions to xenobiotic research. During 2021, we will call for nominations for three awards: the North American Scientific Achievement Award in honor of Ronald W. Estabrook and sponsored by XenoTech, the North American New Investigator Award in honor of James R. Gillette and the Distinguished Accomplishments in Drug Discovery and Development Award. Calls for nominations are now open on the ISSX website, so please consider nominating appropriate colleagues and start assembling the nomination materials without delay.

Before ending, I want to pay tribute to two recently deceased ISSX members who each made particularly important contributions to the Society. Hartmut Derendorf (University of Florida, Gainesville) died suddenly on November 23, 2020. He was founding chair of our Modeling and Simulation Focus group and also chair of the very successful 20th North American ISSX Meeting held in Orlando in 2015. A tribute to Hartmut was provided in the form of an ISSX Webinar on February 16 by Amparo de la Peña (Eli Lilly) and is now accessible on the ISSX website. Lawrence (Larry) Kaminsky died on December 22, 2020. He chaired the 4th North American ISSX in 1992 and made key contributions to drug metabolism over many years. Please find more about these distinguished members of ISSX within this newsletter. On behalf of ISSX, I would like to extend sincere sympathy to families and friends of both Hartmut and Larry.

I look forward to seeing many of you either in person or virtually at ISSX activities in the coming year. As I mentioned last year, I'm always pleased to discuss ISSX with members so feel free to contact me with feedback good or bad at any time.

Enroll in the ISSX Mentorship Program

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.

Sign Up Today! The 2021 mentorship cycle will run through December 2021.
The program matches mentors and mentees based onan award-winning algorithm. From there, the pairs havethe flexibility to define their conversation topics to bestsuit the needs of their relationships. 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, andprovide progress updates.

What did 2020 ISSX Mentorship Program participants say?
"I have learned a lot about alternate career paths and different ways that people can get to their current position. Talking with [my mentor] has also given me a lot of insight into how things are run in a larger company. During COVID-19, I have felt really lucky to have a professional connection to discuss science and career paths with."

"It is an enriching opportunity to be mentored by J. in the framework of ISSX Mentorship Program. While being the mentee of [hers] I learned what areas of my technical expertise should be strengthened, she gave me the heads up on literature to look at and helped me enhance my organizational and leadership skills. The mentor encouraged me to engage proactively in my personal development and performance."

"I highly appreciate inspiring discussions with [my mentor], sharing his experience and career path with me. He encouraged me to develop persistency in moving forward to meeting my career goals. [He] advised on the material to cover to foster my professional development. The mentor has also advised on the cover letter content, he gave me the heads up on how to prepare myself for the fruitful interview as well as provided me with some tips on individual development and research presentation."

ISSX 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 Now!
If you are interested in joining as a mentor or a mentee, please visit the **ISSX website** 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.

Participate in 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 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 of reviewing these educational offerings and setting the webinar schedule.

MARK YOUR CALENDAR FOR THESE UPCOMING ISSX WEBINARS

APRIL 2021

April 6 at 11:00 AM ET (15:00 UTC)
A Tale of Two Drugs–A DMPK Scientist's Journey In Unraveling the Mysteries of Drug Disposition
Presented by Edna Choo Ph.D., Genentech Inc. South San Francisco, California

April 13 at 11:00 AM ET (15:00 UTC)
When Pharmacokinetics Meet Biology
Presented by K. Sandy Pang, Ph.D., Leslie Dan Faculty of Pharmacy, University of Toronto

MAY 2021

May 11 at 11:00 AM ET (15:00 UTC)
The Complex Interplay between the Solute Carrier Transporters, OCT1, THTR1 and THTR2, in Nutrient Deficiencies and Drug-Nutrient Interactions
Presented by Kathy M. Giacomini, Ph.D., School of Pharmacy at the University of California, San Francisco

JUNE 2021

June 8 at 11:00 AM ET (15:00 UTC)
Uncovering Mechanisms of Transporter-Mediated Natural Product-Drug Interactions Using Translational Tools
Presented by Mary Paine, R.Ph., Ph.D., College of Pharmacy and Pharmaceutical Sciences, Washington State University

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.

Join Us this September for the 24th North American ISSX Meeting: Broadening Our Horizons

24TH 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

Preliminary Program*

SUNDAY, SEPTEMBER 12, 2021

Short Course 1: Biotransformation, Mechanism, and Pathways Biotransformation Focus Group
Chair: Valerie Kramlinger, Novartis

Short Course 2: Application of Regulatory Guidances for Transporter Related DDIs
Chairs: Lei Zhang, Food and Drug Administration and Xiaoyan Chu, Merck & Co.

Short Course 3: PBPK Modeling in Drug Development Modeling and Simulation Focus Group
Chair: Ping Zhao, Bill and Melinda Gates Foundation

Short Course 4: Training Course: From Active Molecules to Approved Therapeutics: Navigating Drug Development and Regulatory Challenges
Chair: Christine Fandozzi, Merck & Co.

Opening Keynote Lecture: Discovery and Development of a COVID-19 Vaccine
Hanneke Schuitemaker, Janssen Vaccines & Prevention

Opening Welcome Reception

MONDAY, SEPTEMBER 13, 2021

Plenary Lecture 1: The Economics of the Pharmaceutical Industry
Joseph DiMasi, Tufts University

Concurrent Symposia 1 & 2

Symposium 1: Latest Developments for Assessing the ADME of Biologics
Chairs: Dhaval K. Shah, State University of New York at Buffalo and Vittal Shivva, Genentech, Inc.

Symposium 2: State of the Art Strategies to Enhance Brain Penetration of Small Molecules and Therapeutic Proteins
Chairs: Marilyn Morris, State University of New York at Buffalo and Xiaoyan Chu, Merck & Co.

Concurrent Symposia 3 & 4

Symposium 3: Driving Innovation in Qualitative and Quantitative Bioanalysis
Chairs: Lucinda Hittle, Merck & Co. and Valerie Kramlinger, Novartis

Symposium 4: Beyond Rule of 5
Chairs: Per Artursson, Uppsala University and Dehua Pei, The Ohio State University

New Investigators Session

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Join us for the 24th North American ISSX Meeting

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TUESDAY, SEPTEMBER 14, 2021

Plenary Lecture 2: Membrane Protein Structure-function Analyses Using MS
Carol Robinson, University of Oxford

Concurrent Symposia 5 & 6

Symposium 5: ADME Success Stories
Chairs: Marcel Hop, Genentech, Inc. and Dermot McGinnity, AstraZeneca

Symposium 6: New Strategies for Overcoming ADME Hurdles for Nucleic Acid
Chairs: Jessica Hawes, US Food and Drug Administration and Donglu Zhang, Genentech, Inc.

ISSX Awards Presentations

ISSX Poster Award Finalist Competition Podium Presentations
Award finalists to be determined

ISSX 2020 European Scientific Achievement Award Lecture
Ulrich Zanger, Dr. Margarete Fischer-Bosch Institute of Clinical Pharmacology

ISSX 2021 North American Awards
Award finalists to be determined

WEDNESDAY, SEPTEMBER 15, 2021

Concurrent Symposia 7 & 8

Symposium 7: New Approaches to Improve the ADME Kinetics of Biologics
Chairs: Joseph Balthasar, State University of New York at Buffalo and Greg Thurber, University of Michigan

Symposium 8: Non-invasive Approaches for Drug Disposition Prediction: Biomarkers, Liquid Biopsies and PBPK Modeling
Chairs: Bhagwat Prasad, Washington State University and David Rodrigues, Pfizer Inc.

Concurrent Symposia 9 & 10

Symposium 9: Identifying Biotransformations of Next Generation Biologics
Chairs: Mark Cancilla, Merck & Co. and Surinder Kaur, Genentech, Inc.

Symposium 10: Epigenetics in Drug Disposition and Drug Therapy
Chair: Ann Daly, Newcastle University

Plenary Session: Predicting the Unpredictable – Idiosyncratic Drug Toxicity
Chairs: Amit S. Kalgutkar, Pfizer Inc. and Kaushik Mitra, Janssen Pharmaceutica

*Program subject to change.

Abstracts

Submit an Abstract by Sunday, May 23, 2021

ISSX meetings showcase the work of investigators presenting cutting-edge research on the latest advances in topics related to metabolism, pharmacology, toxicology, molecular biology, and other related disciplines during abstract poster sessions. Presenting a poster allows investigators to share their most up-to-date findings and receive feedback from colleagues.

The abstract submission deadline is Sunday, May 23, 2021. To submit an abstract, visit **www.issx2021.org/abstracts**.

General Poster Presentation

Poster presentations are an integral component of ISSX meetings. We encourage all those involved in the fields of metabolism, pharmacology, toxicology, molecular biology and other related disciplines to consider submitting an abstract for a poster presentation at the 24th North American ISSX Meeting.

Predoctoral and Postdoctoral Poster Awards Competition

Compete for prizes and unique recognition by participating in the Poster Awards Competition. See the meeting website for details. This year, the top five finalists from each category will be invited to present their work in a special plenary session open to all attendees and moderated by members of the Meeting Organizing Committee.

Benefits of presenting a poster at the 24th North American ISSX Meeting include:

Publication: Accepted abstracts of original work will be published in a top-ranked journal, *Drug Metabolism and Pharmacokinetics*.

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Join us for the 24th North American ISSX Meeting

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Global Visibility: Speak with international experts in the field of xenobiotic research and discuss your work during dedicated viewing and presentation times while receiving feedback from colleagues, faculty, and peers.

Acknowledgement of Exceptional Research: Investigators meeting certain criteria are eligible to participate in the Poster Awards Competition. With categories for graduate students and postdoctoral researchers, this competition is available for poster authors to present at a dedicated session for competition finalists and to compete for cash prizes and awards.

A Priceless Opportunity: Submitting an abstract affords opportunities to put your research on the world stage and, as always, there is no submission fee.

Awards

Submit a Nomination for the 2021 ISSX Awards Program

The ISSX awards program was established to recognize excellent scientific and service achievements in the scientific fields covered by the Society. The call for nominations is now open through Sunday, June 6, 2021 for the following awards to be presented at the 24th North American ISSX Meeting:

North American Scientific Achievement Award

In Honor of Ronald W. Estabrook and Sponsored by XenoTech

Presented to an ISSX member who has made major scientific meritorious contributions and who has had major impact on research in the field in their geographical region.

North American New Investigator Award

In Honor of James R. Gillette

Presented to an ISSX member who has made significant contributions to the field during their early career years (normally within 5–10 years from the time of receiving his/her highest earned degree).

Distinguished Accomplishments in Drug Discovery and Development Award

Presented to an individual or to a team employed in an organization involved in drug discovery and/or development at the North American ISSX Meeting. The award will be presented to an individual or team on the basis of:

- A single high impact scientific accomplishment that dramatically changed practices in the ADME characterization of drugs or drug candidates or
- A sustained body of scientific work that shows high impact on the ADME characterization of drugs.

REGISTRATION

Registration opens soon! Bookmark the meeting website, **www.issx2021.org** and be sure to RSVP to receive updates as they become available.

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.

Sandra Baldwin, GlaxoSmithKline

Joseph Balthasar, University at Buffalo, SUNY

Reina Bendayan, University of Toronto

Jacqueline Bezençon, University of North Carolina at Chapel Hill

Marie Bourgeois, USF COPH

Christine Bowman, Genetech

Bruce Buchholz, Lawrence Livermore National Laboratory

Clemens-Jeremias Buehler, Bayer AG

Mark Cancilla, Gilead Sciences

Brian Carr, Gilead Sciences

Xiao Chang, Global Blood Therapeutics

Marvin Chau, University of Washington

Chunlin Chen, Bayer AG

Jonathan Cheong, Genetech

John Clarke, Washington State University

Shelby Coates, Washington State University

Amy Crooks, Pfizer

Sabrinia Crouch, Neurocrine Biosciences

Wanying Dai, University of Toronto

Biplab Das, Agios Pharmaceutical

Elizabeth de Lange, LACDR, Leiden University

Nigel Deeks, GlaxoSmithKline

Tanvi Desai, Merck & Co

Julie Desrivot, Pierre FABRE

Deepika Dhaware, Orion Pharma R&D

Rui Ding, Agios Pharmaceuticals

Luca Docci, Idorsia Pharmaceuticals

Michael Doerksen, University of British Columbia

Qian Dong

Lucy Ellis, Pharmaron UK Ltd

Anna Engelen, Bayer AG

Stacey Fisher, Merck & Co.

Jennifer Ford, UNC Eshelman School of Pharmacy

Sokca Franey, Novartis

Kayla Frost, University of Arizona

Takako Furukawa, Astellas Pharma Inc.

Whitney Garcia, Pacific Northwest National Laboratory

Jingjing Guo, Merck & Co.

Michael Hall, Pharmaron UK Ltd.

Niresh Hariparsad, AstraZeneca

Reema Harish, Alkahest Inc.

Stephanie Harlfinger, AstraZeneca

Sherry He, Translate Bio

Tom Hollenbeck, GNF

Heli Huang

Adam Hughes, GlaxoSmithKline

Hong Jin, GNF

Lixia Jin, Acrus Biosciences

Marta Johnson, GlaxoSmithKline

Anne Kanta, Takeda

Emre Kara

Hardeep Kaur, Pgimer

Johnny Kinzi

Madison Knapp, Sekisui XenoTech

Thomas Kraft, Roche Diagnostics

Sathesh Kumar, Vinnayaka College of Pharmacy

Aditya Kumar, University of Washington

Maxime Le Merdy, Simulations Plus Inc.

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Welcome New Members

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Karen Leys, KU Leuven

Xiaonan Li

Chara Litou, Idorsia Pharmaceuticals Ltd.

Katherine Lundeen, Takeda Pharmaceuticals

Lucy Martinez-Guerrero

Joby McCown, Pfizer

Siennah Miller, University of Arizona

Jennypher Mudunuru, GlaxoSmithKline

Tirtha Nandi, Temple University

Shamema Nasrin, Washing State University

Masayo Oishi, Astellas Pharma Inc.

Arianna Pani, University of Milan

Mayank Patel, Merck & Co.

Swetaben Patel, GlaxoSmithKline

Ryan Pelis, Novartis Institues for Biomedical Research

Jinfu Peng, University of Washington/Central South University

Micheline Piqutte-Miller, University of Toronto

Robert Plumb, Waters Corporation

Anitha Police, Abbvie

Lena Preiss

Martin Radtke, Bayer AG

Sneha Rathi, University of Minnesota

Florence Raynaud, The Institute of Cancer Research

Rory Remmel, University of Minnesota Department of Medical Chemistry

Lilian Richter, Roche

Julia Riede, Novartis

Jens Riedel, Sanofi

Haojing Rong, Kymera Therapeutics

Maria Rosario, M Rosario LLC

Aratrika Saha, LSUHSC

Nora Semren, Daiichi-Sankyo Europe

Armin Sepp, GlaxoSmithKline

Jianxia Shi, GBT

Takahiro Shibayama, Daiichi Sankyo CO., LTD

Abdullah Al Shoyaib, US Food and Drug Administration

Joanne Sproston, Evotec UK Ltd.

Sandra Suarez-Sharp, Simulations Plus Inc.

Artur Swierczek, University at Buffalo SUNY

Kunal Taskar, GlaxoSmithKline

Irina Teslenko, Washington State University

Romy Tilen, University of Basel

Phornpimon Tipthara, Mahidol Oxford Tropical Medicine Research Unit

Giselle Toledo, UAMS

Ashutosh Tripathi, Global Blood Therapeutics

Roberto Villasenor, Roche

Yueting Wang, AbbVie

Jing Wang, Denali Therapeutivs

Shou Yun Yin, Repare Therapeutics

Fei-Fei Yu

Qin Yue, Gilead Sciences

Haoming Zhang, University of Michigan

Yanlin Zhu, Arcus Biosciences

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 (c) 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.

In Memoriam Professor Hartmut Derendorf (1953–2020)

A long time advocator of using quantitative methods to address pharmacological questions in drug development, regulation and clinical practice, professor Derendorf became the founding chair of the ISSX Modeling and Simulation Focus Group (M&SFG) in 2017. With his vision to disseminate quantitative pharmacology concepts within the society of drug metabolism and transport, the M&SFG attracted many participants during pilot sessions at 2018 and 2019 annual meetings and ISSX webinar on biomarkers.

Professor Derendorf (1953-2020) had served as department chair of Pharmaceutics at the University of Florida for many years, before retiring as a distinguished emeritus professor of pharmaceutics at the same university a few years ago. During his tenure, he mentored numerous graduate students, post-doctoral fellows, and junior faculties both nationally and internationally, many of whom hold leading roles in various organizations in academic institutions, regulatory agencies, and pharmaceutical industries around the world. Professor Derendorf had nearly 1,000 publications and book chapters, held leadership positions of scientific societies, and received many prestigious awards in the fields of clinical pharmacology, modeling and simulation, clinical pharmacy, and pharmacy education. The sudden passing-away of Professor Derendorf in November 2020 was a huge loss for all of us in these fields.

In 2020, a few months before his passing, Professor Derendorf worked closely with the leadership of ISSX to formalize the M&SFG. This included the establishment of a steering committee, organization of webinars, planning M&SFG sessions at the annual meeting, and publishing Focus Group newsletters.

A webinar in tribute to Professor Derendorf was presented by Dr. Amparo de la Peña, Senior Research Advisor, Eli Lilly and Company in February 2021 and is now available on the **ISSX website** for viewing.

In Memoriam Laurence Samuel (Larry) Kaminsky (1940–2020)

The drug/xenobiotic metabolism research community is saddened to learn of the recent passing of Dr. Laurence Samuel (Larry) Kaminsky at the age of 80. Larry was born in Cape Town, South Africa, in 1940. He was trained in organic chemistry at the University of Cape Town, receiving his Ph.D. in 1966. Following post-doctoral training at Yale and State University of New York at Albany, he became a faculty member in the Physiology and Medical Biochemistry Department at the University of Cape Town (1968-1975). In 1975, Larry immigrated to the United States with his wife Sylvia, son Philip, and daughter Rena, and joined the Wadsworth Center of New York State Department of Health as a Senior Research Scientist. Larry spent more than 30 years at the Wadsworth Center, taking on various leadership positions, including Director of Biochemical Toxicology, Chief of Laboratory of Human Toxicology and Molecular Epidemiology, Deputy Director of the Division of Environmental Disease Prevention, Professor and Chair of the Department of Environmental Health Sciences, and Director of the Office of Environmental Research Development. In the past 14 years, Larry served as the Associate Chief of Staff for Research and Development at the Stratton VA Medical Center in Albany.

In his early work, Larry published a number of important studies on the biochemistry of cytochrome c. His work on cytochrome c and redox enzymes led him to cytochrome P450, on which his first studies were published in 1975. His most well-known research focused on cytochrome P450 and the metabolism of the anticoagulant warfarin. An early adopter of HPLC, his lab was able to separate multiple metabolites of the stereoisomers of warfarin and leverage this in probing the activities of rat and human P450 enzymes, since multiple enzymes yield different profiles of warfarin metabolites. This resulted in a multitude of important scientific papers on P450 enzymes, frequently in collaboration with noted P450 scientists, such as Fred Guengerich, Joyce Goldstein, and Jim Halpert. His further work on P450 enzymes included characterization of intestinal P450s and the metabolism of various drugs, such as theophylline and tolbutamide. As a researcher in a state public health research organization, Larry also carried out research of interest to public health, such as the biochemical toxicology of fluorocarbons and metals. Career-wise, Larry was the author or co-author of more than 170 original research papers and review articles, many of which were highly cited. One of his papers received the Frank R. Blood Award from the Society of Toxicology in 1991.

Larry provided important service and leadership to the drug/xenobiotic metabolism research community. He served as an Associate Editor for Drug Metabolism and Disposition (2000-2017) and Pharmacology and Therapeutics (2004-2008) and was a Guest Editor for Molecular Pharmacology (1992). He was elected Chair of the Drug Metabolism division of ASPET (2005), and Councilor (1994-1997) and Treasurer (2005-2009) of ISSX. He chaired two major scientific meetings in our field for ISSX (1992) and Microsomes and Drug Oxidations (2008). He was a member of the standing International Advisory Committee for Microsomes and Drug Oxidations.

Larry mentored eight Ph.D. students and numerous postdoctoral scientists and junior faculty members. His scientific legacy continues to be realized in the research carried out in the academic and private sectors by those scientists he trained. After joining the VA, Larry changed his focus to translational research, mentoring many physician scientists and significantly expanding both basic and clinical research at the Albany VA Medical Center.

Our research community extends its condolences to Larry's family. Larry enjoyed life as much as he enjoyed research. He liked many things in life: music, food, wine, art, and travel. He was well known for his knowledge in wine tasting. He was a role model for balancing life and career. Larry will be remembered as a passionate researcher, a good friend, a great mentor, an inspiring leader, and a dedicated public servant.

By Xinxin Ding and Scott Obach

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