ISSX International Society for the Study of Xenobiotics

Volume 46 Issue 2, 2022

ISSX President's Message

By Scott Obach,
ISSX President

Greetings Fellow ISSX Members!

It's exciting times as our organization works its way into the new normal of the changes caused by the COVID-19 pandemic. Our first in-person meeting since 2019, in Seattle this September 11–14, is imminent. Registrations continue and we are on pace to have over 500 participants. It has been three long, years and I really look forward to meeting people again (in true reality, not virtual reality!) and having robust scientific discussions at the poster presentations and exhibits.

In addition to the lectures and posters, we will have four awards given at the meeting. The award for Scientific Achievement from an Underrepresented Nation will be given for the first time. This award was established in our effort to increase the global diversity and outreach of ISSX and is given with the appreciation that conducting xenobiotic research can be even more challenging in nations where public funding of research is scant, and scientific and technological infrastructure may not be as advanced. We seek to honor the efforts of our colleagues who achieve scientific advances under these circumstances. Our inaugural award honors Professor Nancy Hakooz of the University of Jordan. The R. T. Williams Distinguished Scientific Achievement Award, which is given only every third year at an international conference, will also be awarded in Seattle to one of our colleagues who has had a lifelong career of high accomplishments in xenobiotic research, Professor Magnus Ingelman-Sundberg of the Karolinska Institute. We will also present the Frederick J. Di Carlo to a long-time ISSX member with a long history of service to the Society, Dr. Bill J. Smith. We round out the awards presentations with the Distinguished Accomplishments in Drug Discovery and Development Award which is to be presented to Dr. Dennis A. Smith. The meeting will kick off with a discussion of clearance concepts led by Sandy Pang and Les Benet. Clearance concepts have been with us for over 50 years and are a routinely-applied framework of xenobiotic disposition in drug research and clinical pharmacology, yet as scientists, it is always good to reexamine and reconsider even the most tried and true concepts, and I look forward to the exchange.

Scott Obach
ISSX President

Beyond the Seattle meeting, planning is well underway for 2023 with three regional conferences. For the first time, ISSX will meet in India for the Asia-Pacific regional

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IN THIS ISSUE

Book Review

DRUG METABOLISM
Editor: Katherine Dunnington
IntechOpen Limited
108pp. ISBN-13: 978-1-83968-879-9 (2022)

This is an interesting introductory text which appears to be available as "open access" published by IntechOpen Limited. It contains five submissions written by a total of 21 authors and the chapter titles read; "Hepatocytes and their role in metabolism," "Drug Metabolism in Drug Discovery and Preclinical Development," "From Pharmacogenetics to Gene Expression: Implications for Precision Medicine in Diabetes," "Metabolism of Phytochemicals," and "*In vitro* Metabolic Stability of Drugs and Applications of LC-MS in Metabolite Profiling." Many references (426) add their support.

Initially a description of liver structure and function is given. Various different cell types are explained together with their specialities and biological function. Emphasis is placed on the drug metabolising enzymes and also the role of the liver in biliary secretion. The general principles of drug (xenobiotic) metabolism are covered and also factors which may affect the response to a drug by modifying its pharmacokinetic behaviour. The importance of inter-individual variation in metabolic capacity and efficiency is stressed and the consequences of such variation on therapeutic outcomes and the potential development of adverse reactions are highlighted. The requirement for the inclusion of metabolites within drug safety evaluation is underlined and the aspect of parent compound stability is addressed. Various systems are explored to evaluate stability and the specific use of the techniques of LC-MS and its multi-various modifications to evaluate metabolic profiles are detailed. As examples, several phytochemicals that have been developed for exploitation in medicine and their subsequent metabolic pathways uncovered for these molecules using such techniques are given.

THE ADME ENCYCLOPEDIA: A COMPREHENSIVE GUIDE ON BIOPHARMACY AND PHARMACOKINETICS
Editor: Alan Talevi
Springer Nature
1221pp. ISBN-13: 978-3-030-84859-0 (2020)

This hefty tome is composed of alphabetically ordered items covering the subject of pharmacokinetics, the mathematical appraisal of absorption, distribution, metabolism, and excretion phenomena. Overlying this core is a broader remit that includes such associated topics as inter-individual variation and pharmacogenomics, personalized medicine, bioequivalence, drug resistance, drug interactions, biopharmaceuticals and the prediction of pharmacokinetic properties via *in vitro* and *in silico* techniques. Containing a mix of both basic principles and advanced information, this is an invaluable source for both beginner and established practitioner. Such a detailed compendium is a worthy addition to a library or personal collection and together with over 200 illustrations (146 color) it makes an ideal reference text.

Notified by

Steve Mitchell
Imperial College London, UK

Book Ordering Information

IntechOpen Limited
5 Princes Gate Court
London SW7 2QJ, UK
Tel: +44 20 8089 5702

Springer Nature
Switzerland AG
www.springer.com

Save the Date: ISSX/MDO 2022: The 24th International Symposium on Microsomes and Drug Oxidations and 13th International ISSX Meeting

September 11–14, 2022 | Seattle, Washington

JOIN US IN SEATTLE, WASHINGTON IN SEPTEMBER!

On behalf of the Meeting Organizing Committee, it is our pleasure to invite you to the 24th International Symposium on Microsomes and Drug Oxidations (MDO) and 13th International Meeting of the International Society for the Study of Xenobiotics (ISSX). This meeting will convene at the Westin Seattle, September 11–14, 2022.

This is the second co-organized meeting for MDO and ISSX and it provides an extremely valuable and truly unique opportunity for researchers to gather and exchange ideas and expertise. In addition to an outstanding scientific program, the meeting provides you with access to state-of-the-art exhibits and ample opportunities to present your work during our poster presentation sessions.

MEETING ORGANIZING COMMITTEE

Meeting Organizing Committee Chairs: Mike Zientek, Takeda, USA, ISSX, and Xiaobo Zhong, University of Connecticut, USA, MDO

MEETING ORGANIZING COMMITTEE MEMBERS:

MDO:
Huichang Bi, Sun Yat-Sen University, China
Xinxin Ding, University of Arizona, USA
Emily Scott, University of Michigan, USA
Miki Nakajima, Kanazawa University, Japan
Damjana Rozman, University of Ljubljana, Slovenia
Aiming Yu, University of California at Davis

ISSX:
Namandjé Bumpus, Johns Hopkins, USA
Mike Coughtrie, UBC, Canada
Barry Jones, Pharmaron, United Kingdom
Scott Obach, ISSX President, Pfizer, USA
Masayo Oishi, Astellsa Pharma, Japan
Allan Rettie, University of Washington, USA

PROGRAM*

Sunday, September 11, 2022

Short Course 1: Fundamentals of Bioanalysis for Proteins, Cell and Gene Therapy, Organized by the Bioanalysis in ADME Science Focus Group
Chairs: Lucinda Hittle, Merck, Rahway, New Jersey, USA and Matthew Albertolle, Takeda Pharmaceuticals, San Diego, California, USA

Short Course 2: Addressing ADME Models and Challenges of New Candidates to Better Translate *in vitro* to *in vivo*: (a) investigating low clearance drugs, (b) defining the role of the gut microbiome and (c) normalizing the use of microfluidic systems for biotransformation and toxicity
Chairs: Rheem Totah, University of Washington, Seattle, Washington, USA, and Deepak Dalvie, Crinetics Pharmaceuticals, San Diego, California, USA

Short Course 3: State of Science of PBPK 2022: Beyond P450s
Chairs: Yuan Chen, Genentech, South San Francisco, California, USA, and Ping Zhao, Bill & Melinda Gates Foundation, Seattle, Washington, USA

Short Course 4: Transporter Phenotyping: from Qualitative Characterization to Quantitative Prediction
Chairs: Xiaoyan Chu, Department of ADME and Discovery Toxicology, Merck & Co. Inc. Kenilworth, NJ, USA , and Xinning Yang, Office of Clinical Pharmacology, US Food and Drug Administration, Silver Spring, Maryland, USA

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Concurrent Focus Group Meetings

Opening Keynote Presentations and Panel: Perspectives on Long-held Clearance Concepts
Featuring lectures from Leslie Z. Benet, UCSF School of Pharmacy, San Francisco, California, USA and K. Sandy Pang, Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada and a robust panel discussion including distinguished panelists William J. Jusko, School of Pharmaceutical Sciences, University at Buffalo, Buffalo, New York, USA, and Jasleen Sodhi, South San Francisco, California, USA

Opening Welcome Reception with Exhibitors and Posters, *Sponsored by Sekisui, XenoTech LLC*

Monday, September 12, 2022

New Investigator Roundtable Networking Event

Plenary Lecture 1: Cytochrome P450/Redox Partner Interactions
Emily Scott, University of Michigan, Ann Arbor, Michigan, USA

Concurrent Symposia 1 & 2

Symposium 1: Advances in *in silico* ADME and Structure-based Modeling Prediction
Chairs: Christopher Keefer, Pfizer, Groton, Connecticut, USA and Emily Scott, University of Michigan, Ann Arbor, Michigan, USA

Symposium 2: Organization of P450 System and Related Proteins in Biological Membranes
Chairs: Wayne L. Backes, Louisiana State University Health Sciences Center, New Orleans, Louisiana, USA and Yuji Ishii, Kyushu University, Fukuoka, Japan

Concurrent Symposia 3 & 4

Symposium 3: Cryo-EM to Advance Functional and Mechanistic Insights of Enzymes and Transporters
Chair: Yoichi Osawa, University of Michigan, Ann Arbor, Michigan, USA

Symposium 4: 3-D culture, Organ-on-chip, and Microphysical Systems in ADME Studies
Chairs: Baitang Ning, National Center for Toxicological Research of the U.S. FDA, Jefferson, Arkansas, USA and Nina Isoherranen, University of Washington, Seattle, Washington, USA

A Tribute to Michael Waterman

ISSX Awards Presentations

2022 Award for Outstanding Achievement in Xenobiotic Research by a Scientist from an Underrepresented Nation, Sponsored by Pfizer
Award to be presented to Nancy Hakooz, Ph.D. and Award Lecture to follow

The 2022 Frederick J. Di Carlo Distinguished Service Award
Award to be presented to Bill J. Smith, Ph.D. and Award Lecture to follow

Tuesday, September 13, 2022

Plenary Lecture 2: What Drugs do to Our Bugs
Kiran Patel, University of Cambridge, Cambridge, UK

Concurrent Symposia 5 & 6

Symposium 5: Clinical Development Impact Stories of Micro Dosing and Microtracer Studies
Chairs: Marie Croft, Pharmaron ABS, Inc, Germantown, Maryland, USA and Graeme Young, GSK, Ware, Hertfordshire, United Kingdom

Symposium 6: Role of Non-coding RNAs in Xenobiotic Metabolism and Regulation
Chairs: David J. Waxman, Boston University, Boston, Massachusetts, USA and Kyounghyun Kim, University of Cincinnati, Cincinnati, Ohio, USA

ISSX Awards Presentations

ISSX Poster Award Finalist Competition Podium Presentations
The 2022 R.T. Williams Distinguished Scientific Achievement Award
Award to be presented to Magnus Ingelman-Sundberg, Ph.D. and Award Lecture, From CYP2C12 to CYP2C19 during 50 years of P450 Research, to follow

2022 Distinguished Accomplishments in Drug Discovery and Development Award
Award to be presented to Dennis A. Smith, Ph.D.

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Save the Date: ISSX/MDO 2022

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Plenary Session 1: Advancement and Influencers in the Prediction of Drug Interactions and Human Exposure
Chairs: Jaydeep Yadav, Merck, Boston, Massachusetts, USA and Katrina Claw, University of Colorado, Aurora, Colorado, USA

Attendee Networking Event at the Seattle Art Museum, *Sponsored by Discovery Life Sciences and Takeda Pharmaceutical Company*

Wednesday, September 14, 2021

Plenary Lecture 3: Structure-Metabolism-Toxicity Evaluation of Protein Kinase Inhibitors
Klarissa Jackson, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

Plenary Session 2: Clinical Importance of Drug Transporters
Chairs: Aiming Yu, University of California Davis, Sacramento, California, USA and Lauren Aleksunes, Rutgers University, Piscataway, New Jersey, USA

Plenary Session 3: Drug Discovery from the Trenches
Chairs: Masayo Oishi, Astellas Pharma Inc., Tsukuba, Ibaraki, Japan and Karim Azer, Axcella Therapeutics, Cambridge, Massachusetts, USA

*Program subject to change.

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REGISTER TODAY

Don't miss out on this outstanding scientific and social program.
Register today by visiting **issx2022.org/registration**.

ISSX 2022 Workshop: Physiologically-Based Pharmacokinetic (PBPK) Modeling

The ISSX 2022 Workshop, Physiologically-Based Pharmacokinetic (PBPK) Modeling, was held virtually June 7–9, 2022. The workshop, co-chaired by Manthena Varma and Yuan Chen created a virtual space for attendees and speakers to learn and connect.

The three-day workshop aimed to bring together scientists from academia, industry, and regulatory agencies to discuss contemporary topics in the application of PBPK as a mechanistic tool in the discovery and development setting. The virtual format of this workshop allowed for interaction and discussion between attendees, speakers, and poster authors through panel discussions and interactive poster sessions alongside the speaker presentations. Through each of the three daily sessions, topics covered emerging trends such as special population, biomarker-informed DDI modeling, and diverse drug development applications. All presentations, slides, panel discussions, and Q&A have been made available to attendees to review at their leisure and are also now available on the new **ISSX Learning Center** for those who were unable to attend live.

The workshop began on Tuesday, June 7 with Session One, “Mechanistic Modeling of PK in Special Population.” The session was chaired by Yuan Chen and Oliver Hatley. Presenters included Jashvant Unadkat, Tycho Heimbach, Wen Lin, Ying-hong Wang, Shawn Pei Feng Tan, and Di Wu.

Session Two, “Current State of Biomarker-informed PBPK Modeling to Predict DDIs,” was chaired by Nita Patel and Yurong Lai on Wednesday, June 8. Session two speakers included A. David Rodrigues, Aleksandra Galetin, Xinning Yan, Kenta Yoshia, Mayur K. Ladumor, and Chie Emoto.

On the final day of the workshop, Vankatesh Pilla Reddy and Jaydeep Yadav co-chaired Session Three, “Successful Drug Development Stories and Learnings.” Speakers in this session included Tamara Cabalu, Pradeep Sharma, Karen Rowland-Yeo, Jianghong Fan, Emi Kimoto, and Jaidip Gill.

At the end of each daily session, attendees were able to attend poster presentations. The session co-chairs moderated the poster presentations, allowing for productive conversations and questions. Poster authors also pre-recorded a brief presentation of their posters for attendees unable to attend the afternoon sessions live.

ISSX appreciates the commitment and efforts of the Workshop Organizing Committee, speakers, poster presenters, and attendees who made this a successful workshop.

For anyone who was unable to register and attend the workshop, the recordings and speaker slides are accessible in the new **ISSX Learning Center**.

ISSX Launches the ISSX Learning Center

ISSX provides numerous virtual educational offerings for members and non-members alike. In June 2022, ISSX announced the new **ISSX Learning Center**, a new virtual learning experience, where members can access all ISSX **webinars**, recorded **workshops**, and **short courses**.

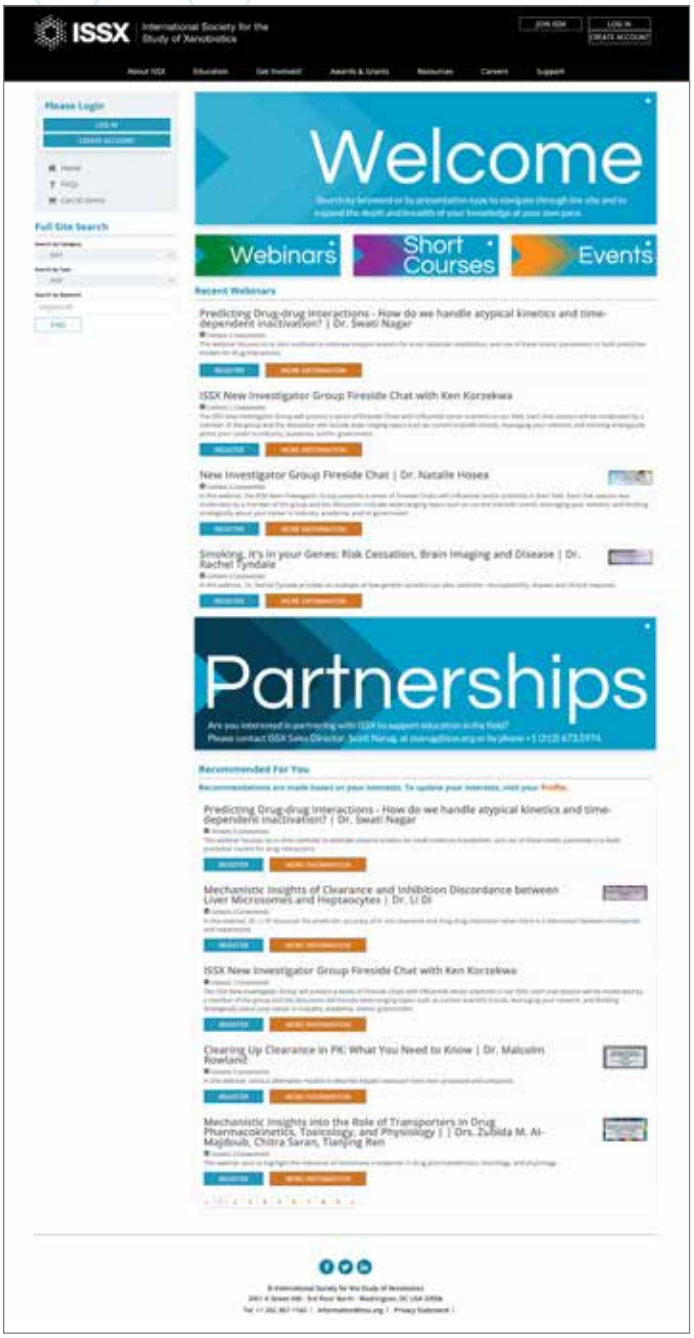
Getting started with the **ISSX Learning Center** is easy. ISSX members can log in using their ISSX username and password, with no need to remember another password. After logging in, members can update their profile to receive recommended webinars based on their interest in our top five interest categories. Members can also update their time zone to ensure that future live webinars offerings will be shown in their time zone.

To register for an offering listed in the ISSX Learning Center, members simply select the “Register” button for the product. Members can then choose to continue adding additional offerings to their cart, or finish the registration immediately. As a reminder, all ISSX members receive access to webinars free of charge!

All registered products appear in the Dashboard section of the member’s account. Here, members can easily filter by the type of product they would like to view or filter by completion status to view educational offerings that have not been yet been viewed. All of the products also include access to speaker slides, along with the recordings.

Additionally, the ISSX Learning Center includes a robust Frequently Asked Questions section to assist with registering for a product, logging in, or other questions.

The ISSX Learning Center can help members stay on top of research in numerous topics, and we are proud to offer this new valuable resource. **Log in** today!



ISSX President's Message

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conference, in Bangalore. Personally, I am excited as India is a country that I have not had the opportunity to visit yet. Then in June, we have the European meeting in the U.K. in collaboration with the Drug Metabolism Discussion Group. And finally, in the late summer we will have our North American meeting in Boston (at the venue where it was supposed to happen in 2021).

The other big news is the launch of the Learning Management System (LMS) on the ISSX Website. Go to "Education" on the menu bar of the main web page and you will see "ISSX Learning Center" in the dropdown. This is a members-only benefit where you will find recordings of the webinars (free) as well as past short courses (free to those who attended and paid content for others). This is version 1.0 for the LMS so we'd really like to hear your feedback on the interface, user-friendliness, indexing, etc., so we can improve it. If we can say that anything positive emerged due to the pandemic, it is that it has stimulated our investment in on-line resources for our members. The ISSX Council has a goal to evolve ISSX to not be just an organization that organizes conferences, but one that has many resources available to its members to enhance and enable scientific advances on xenobiotics and how they interact with living systems. The LMS is one of those resources. I encourage all ISSX members to convey to colleagues the value of ISSX membership.

All in all, some things we can all look forward to.

All the best,
Scott

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.

Enroll in the Mid-Year 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.

THE MID-YEAR MENTORSHIP CYCLE WILL RUN THROUGH MARCH 2023 AND ISSX WILL MAKE MATCHES IN EARLY SEPTEMBER 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?

"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 COVID19, 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 [my mentor] in the framework of the ISSX Mentorship Program. 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."

ISSX MENTORSHIP PROGRAM

"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 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** 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.

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.

2022 NEW MEMBERS

Yoshiwkazu Abe, KISSEI Pharmaceutical Co Ltd, Azumino, Nagano, Japan

Nouf Alwadei, Chapman University, Orange, California, United States

Ogochukwu Amaeze, University of Washington, Seattle, Washington, United States

Samuel Arnold, University of Washington, Seattle, Washington, United States

Aurora Authement, UW Pharmaceutics, Seattle, Washington, United States

Sungyeun Bae, Department of Clinical Pharmacology and Therapeutics, Seoul, South Korea

Ankit Balhara, University of Washington, Seattle, Washington, United States

Jhohann Richard Benzi, University of Sao Paulo, Cravinhos, Sao Paulo, Brazil

Mackenzie Bergagnini-Kolev, Simcyp Limited (Division of Certara), Duvall, Washington, United States

Yi-An Bi, Pfizer Inc, Groton, Connecticut, United States

Christine Bowman, Genentech, San Francisco, California, United States

Quinton Bradley, American College of Health Sciences, Lake Elsinore, California, United States

Simone Brixius-Anderko, University of Pittsburgh, Pittsburgh, Pennsylvania, United States

Ewa Bromek, Maj Institute of Pharmacology Polish Academy of Sciences, Kraków, Poland

Kim Brøsen, University of Southern Denmark, Odense, Europe, Denmark

Kristen Cardinal, Seagen, Bothell, Washington, United States

Matt Cerny, Pfizer, Groton, Connecticut, United States

Ya-Ting Chang, Exelixis Inc., Alameda, California, United States

Revathi Chapa, SIMULATIONS PLUS, Millcreek, Washington, United States

Kuan-Fu Chen, Simcyp Limited (Division of Certara), Bellevue, Washington, United States

Xin Chen, University of Washington, Seattle, Washington, United States

Yan Chen, Shanghai, China

Seok-jin Cho, College of Pharmacy, CHA University, Seongnam-si/ Gyeonggi-do, South Korea

Seong Choon Choe, Oncordbio, Inc., Seoul, South Korea

Jeffrey Clarine, Mirati Therapeutics Inc., San Diego, California, United States

Prerna Dodeja, University of Pittsburgh, Pittsburgh, Pennsylvania, United States

Ann-Cathrine Dunvald, University of Southern Denmark, Odense, Denmark

Yen Duong, Gossamerbio, San Diego, California, United States

Lauren Farr, Seagen Inc, Bothell, Washington, United States

Iijuan Fu, BridgeBio, South San Francisco, California, United States

Zsuzsanna Gáborik, SOLVO Biotechnology, A Charles River Company, Budapest, Hungary

Manuela Gast, SeaGen, Arlington, Wisconsin, United States

Nilesh Gaud, Ryvu Therapeutics, Krakow, Lesser Poland, Poland

Xue Snow Ge, QED Therapeutics, San Francisco, California, United States

Yukuang Guo, Takeda, Boston, Massachusetts, United States

Tianran Hao, University of Washington, Seattle, Washington, United States

Qingfeng He, Fudan University, Shanghai, China

Yi-sheng He, China

Todd Hieronymus, Q2 Solutions, Indianapolis, Indiana, United States

Katie Hinricher, Seagen, Inc, Bothell, Washington, United States

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Welcome New Members

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Young Bean Hong, College of Pharmacy, CHA University, Seongnam-si, South Korea

Clara Hsia, Vertex Pharmaceuticals, San Diego, California, United States

Sejung Hwang, Seoul National University, Seoul, South Korea

Takayo Inoue, METiS Therapeutics, Cambridge, Massachusetts, United States

Angela Jeong, University of North Carolina at Chapel Hill, North Carolina, United States

Jing Jin, University of Connecticut, Storrs, Connecticut, United States

Taeyoon Jung, University of Washington, Seattle, Washington, United States

Yoshiteru Kamiyama, Astellas Pharma Inc., Tsukuba-shi, Ibaraki, Japan

Jani Katajapuhjo, University of Helsinki, Helsinki, Finland

Ivy Kekessie, Genentech, South San Francisco, California, United States

Ansar Khan, Syngene International Limited, Bengaluru, India

Tamara King, Bristol-Myers Squibb, Plainsboro, New Jersey, United States

Abigail Klein, University of North Carolina at Chapel Hill, North Carolina, United States

Edwin Labut, Oregon State University, Corvallis, Oregon, United States

Yau Lau, Cyprotes US, Framingham, Massachusetts, United States

Jonghwa Lee, University of North Carolina at Chapel Hill, North Carolina, United States

Kyeong-Ryoon Lee, Korea Research Institute of Bioscience and Biotechnology, Cheongwon-Gu, Cheongju-Si, Chungbuk, South Korea

Minwoo Lee, Dewcell Biotherapeutics, Inc., Seongnam-si, South Korea

Chonghua Li, Sunovion Pharmaceuticals, Marlborough, Massachusetts, United States

Ching-yu Lin, National Taiwan University, Taipei, Taiwan

Jieying Lin, A*STAR Skin Research Labs, Singapore

Anish Mahadeo, University of Washington, Seattle, Washington, United States

Vamshi Manda, Recursion Pharmaceuticals, Salt Lake City, Utah, United States

Alina Meyer, Uppsala University, Uppsala, Sweden

Kazuyoshi Michiba, The University of Tokyo, Hongo, Bunkyo-ku, Japan

Julia Migliorati, University of Connecticut, Storrs, Connecticut, United States

Magdalena Miodek, Ryvu Therapeutics S.A., Krakow, Lesser Poland, Poland

Christina Mortensen, University of Southern Denmark, Odense, Denmark

Claire Mukashyaka, Sarepta Therapeutics, Cambridge, Massachusetts, United States

Aiden Nguyen, Pacific University Oregon, Forest Grove, Oregon, United States

Sanjay Nigam, University of California San Diego, La Jolla, California, United States

Nicholas Njuguna, F. Hoffman-La Roche Ltd, Basel, Switzerland

Tara O'Brien, Alturas Analytics, Inc., Moscow, Idaho, United States

Koichi Omura, FUJI YAKUHIN CO., LTD., Saitama City, Saitama, Japan

Victoria Oyanna, Washington State University, Spokane, Washington, United States

Marie-Noelle Paludetto, University of Helsinki, Department of Clinical Pharmacology, Helsinki, Finland

Cody Parker, Mirati Therapeutics, San Diego, California, United States

Vishal Pendharkar, Experimental Drug Development Centre, Singapore

Katarzyna Piorkowska, AC Immune, Lausanne, Vaud, Switzerland

Farah Raad, Hoffmann la Roche AG, Basel, Switzerland

Kavita Raikuvar, Bombay College of Pharmacy, Mumbai, India

Ellen Riddle, University of Washington, Seattle, Washington, United States

Rene Ruvalcaba, DICE Therapeutics, South San Francisco, California, United States

Barbara Saechao, Mirati Therapeutics, San Diego, California, United States

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Welcome New Members

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Siddhee Sahasrabudhe, University of Minnesota, Minneapolis, Minnesota, United States

Emilie Salim, Novo Nordisk A/S, Cph S, Copenhagen, Denmark

Letícia Salvador Vieira, University of Washington, Seattle, Washington, United States

JoAnn Scatina, Deerfield, New York, New York, United States

Erin Scholz, GlaxoSmithKline, Collegeville, Pennsylvania, United States

Manish Sharma, University of Nebraska Medical Center, Omaha, Nebraska, United States

Keiann Simon, University of Washington, Seattle, Washington, United States

Dilip Singh, Washington State University, Spokane, Washington, United States

Irina Slobodchikova, ALLIANCE PHARMA, Malvern, Pennsylvania, United States

Roz Southall, Certara UK, Sheffield, South Yorkshire, United Kingdom

Tom Stephan, QED Therapeutics-A BridgeBio Company, Durham, Connecticut, United States

Bowen Tang, PTC Therapeutics, Inc., Bridgewater, New Jersey, United States

Lloyd Wei Tat Tang, National University of Singapore, Singapore

Aarzoo Thakur, Washington State University, Spokane, Washington, United States

Annika Tillmann, University of Manchester, Manchester, United Kingdom

Ariel Topletz-Erickson, Seagen, Inc, Bothell, Washington, United States

Gavin Traber, University of California, Davis–School of Medicine: Department of Biochemistry and Molecular Med, Sacramento, California, United States

Lionel Trottet, Galapagos, Romainville, France

Markus Trunzer, Novartis, Basel, Switzerland

Arttu Uoti, University of Helsinki, Helsinki, Finland

Subrahmanyam Vangala, Reagene Biosciences Pvt Ltd, Bangalore, Karnataka State, India

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