



# Biological Modeling Specialty Section Newsletter

Volume 7, No 1  
May, 2020

## President's message

Welcome to the BMSS newsletter!

For returning and new members, I would like to take this opportunity to introduce the officers for this year. A detailed description of your officers can be found on the next page. The officers are always happy to help and answer questions that you may have. I would also like to graciously thank our past officers for their service as they worked hard to bring continuity and great ideas to BMSS. They left us some great words about serving for your section and do think about joining in the next election. Please also congratulate all the awardees for their great work in computational modeling, including the students and postdocs. A brief message from one of our student award winners and future scientists can be found following the list of award recipients. Since the last meeting was cancelled, we were going to announce our new mascot and naming contest. It is our new prize for all upcoming famous reception quizzes. In addition, a few upcoming webinars will be hosted by SOT and BMSS, as well as a special guest speaker for our first virtual reception. In this unique health crisis, we will have a glimpse how science and modeling had played a major role in assessing the safety of us all. There is still lots of time to host many more webinars, so do send us any ideas as it is one of the most appreciated activities from our members. Finally, our website will be revamped this year and we have updated our social media activities via Twitter ([@sotbmss](https://twitter.com/sotbmss)) and [LinkedIn](https://www.linkedin.com/company/biological-modeling-specialty-section-newsletter/).

Stay safe all and wishing you well,

Andy  
BMSS President

## BMSS Officers 2020-2021

### President

Andy Nong

### Vice President

Qiang Zhang

### Vice President-Elect

Patricia Ruiz

### Secretary-Treasurer

Miao Li

### Past President

Brad Reisfeld

### Councilors

Dustin Kapraun  
Lisa Sweeney

### Post-Doc Representative

Yi-Hsien Cheng

### Student Representative

Michel Bteich

Interested in joining?

[Apply today!](#)



Thank you all  
for your  
service!

## Outgoing officers

Jeff Fisher, Tammie Covington, and Alicia Paini served as BMSS officers in 2019-2020 and completed their terms of service in May.



Dr. Fisher acted as the Past President Councilor this past year after serving as Vice President Elect in 2016-2017, Vice President in 2017-2018, and President in 2018-2019. He leaves us with the following message.

*The last four years were good as I learned how BMSS and SOT has changed from my first experience as a BMSS officer shortly after the BMSS was created. Initially I underestimated my time commitment to the BMSS, and later I learned that if several officers in the BMSS people are functioning at a high level, then much can be accomplished. As technology and the field of toxicology changes BMSS should change and embrace and promote new in silico methods. As a BMSS officer now is your time to impact the field.*

Ms. Covington served as Secretary-Treasurer in 2018-2020. (This office has a two-year term.)

*I don't think I've served as an officer for a group since my college sorority days and, ironically, I was treasurer then, too. In my two years as BMSS secretary-treasurer I've learned more about how SOT supports the specialty sections both financially and organizationally. It has also reinforced the concept that it does "take a village" to accomplish the goals of the BMSS. Everyone needs to pull their weight, but the group of BMSS officers is always there to help fill in when needed. It has been an enlightening experience and I give Miao my best wishes as he takes over his new role.*

Dr. Paini served most recently as Second-year Councilor.

*Enthusiastic two years served as a BMSS counselor, passed in the blink of an eye, made me learn new aspects of this society and the different roles one represents. I am now very pleased to have had this opportunity, learning to use social media to promote BMSS activities. I wish a lot of success to the newly BMSS officers taking up the new roles this year... and keep safe!*



We appreciate your active involvement in our BMSS and ask you to consider running for office next election.

[JOIN!](#)



## Awards

Congratulations 2020 BMSS Awards Recipients!

Since the meeting was cancelled, we wanted to remind you all again of the wonderful work from our members. We also want to congratulate all the students and postdocs who applied for the awards. They are keeping the future of biological modeling healthy. Please encourage them with their great work and apply to the many BMSS awards!

[LEARN MORE](#)

### **2020 Perry J. Gehring Award for Biological Modeling.**

This year we have two award winners.

**Dr. Zhenzhen Shi**, Postdoctoral Fellow at Emory University, mentored by Dr. Qiang Zhang. "Development of a Virtual Population Model of Thyroid Hormone Regulation for Safety Assessment of Endocrine Disrupting Chemicals".

**Honesty Tohon**, Graduate Student at University of Montreal, mentored by Dr. Sami Haddad. "Estimation of toluene exposure in air from BMA (S-benzylmercapturic acid) urinary measures using a reverse dosimetry approach based on physiologically based pharmacokinetic modeling".

### **2020 Andersen-Clewell Trainee Award with RASS/Endowment**

**Qiran Chen**, Graduate Student at Indiana University, mentored by Dr. Kan Shao. "A Novel Dose-Response Framework with Quantitatively Integrated MOA Information".

# Awards cont'd



## 2020 BMSS Best Trainee Abstract Award

**Kazi Tasneem**, Graduate Student at Vanderbilt University. "Toxicokinetic Model Predicts Cellular Exposure in Organ-on-Chip Microdevices".

Honorable mentions (announce name and affiliation only):

Amanda	Bernstein	Oak Ridge Institute for Science and Education
Alexander	Blanchette	Texas A&M University
Yi-Hsien	Cheng	Kansas State University
Wei-Chun	Chou	Kansas State University
Chimeddulam	Dalaijamts	Texas A&M University
David	Filipovic	Michigan State University
Kelly	Fraser	NIOSH
Mounika	Girireddy	MultiCASE Inc.
Alice	Han	Pacific Northwest National Laboratory
Renee	Lake	Colorado State University
Laura	Lévêque	Université de Montréal
Wenjie	Qi	Michigan State University
Zhenzhen	Shi	Emory University Rollins School of Public Health
Pranika	Singh	Edelweiss Connect GmbH
Nadia	Tahiri	Université de Montréal
Qianrui	Wang	Wageningen University and Research
Tuan	Xu	NIH/NCATS
Lin	Ye	NIH
Todd	Zurlinden	US EPA

A few words  
from our  
trainee award



## Awards cont'd

I am a PhD Candidate in Chemical and Biomolecular Engineering at Vanderbilt University and working under the supervision of Prof. Shane Hutson. In my PhD research, I have been working on a project to develop a new method of preclinical toxicity/safety testing of chemicals/ pharmaceuticals using microfluidic organ-on-chip technology, enabling an ethical platform to accelerate the world's transition from animal testing methods to a human-centric approach to chemical risk assessment. My research involves predictive toxicology due to drug/toxicant exposure and using of modeling tools combining pharmacokinetics and computational fluid dynamics to investigate transport and bioavailability of drug/pharmaceuticals in in vitro organ-on-chip microdevices.

This is a great honor for being chosen as the winner of the Best Trainee Abstract Award from Biological Modeling Specialty Section (BMSS) at SOT. I express my sincere gratitude to BMSS Leadership and the Award Committee for selecting me as a recipient of this award amongst many qualified graduate students and postdoctoral trainees. This recognition will surely inspire me to further progress my academic and research endeavor in biological modeling in the context of toxicology. I cordially thank and appreciate BMSS for the dedication to encouraging and promoting trainee research.

**Kazi Tasneem**

Modeler  
Rocks!

## Awards cont'd



### 2019 Biological Modeling Best Paper

**Wei-Chun Chou and Zhoumeng Lin.** Bayesian evaluation of a physiologically based pharmacokinetic (PBPK) model for perfluorooctane sulfonate (PFOS) to characterize the interspecies uncertainty between mice, rats, monkeys, and humans: Development and performance verification. *Environ Int.* 2019.

**Serena Manganelli, Alessandra Roncaglioni, Kamel Mansouri, Richard S Judson, Emilio Benfenati, Alberto Manganaro, Patricia Ruiz.** Development, validation and integration of in silico models to identify androgen active chemicals. *Chemosphere.* 2019

### Honorable mentions:

**Han AA, Timchalk C, Carver ZA, Weber TJ, Tyrrell KJ, Sontag RL, Gibbins T, Chrisler WB, Weitz KK, Du D, Lin Y, Smith JN.** *Toxicol Sci.* 2019 Physiologically Based Pharmacokinetic Modeling of Salivary Concentrations for Noninvasive Biomonitoring of 2,4-Dichlorophenoxyacetic Acid (2,4-D).

**Ring CL, Arnot JA, Bennett DH, Egeghy PP, Fantke P, Huang L, Isaacs KK, Jolliet O, Phillips KA, Price PS, Shin HM, Westgate JN, Setzer RW, Wambaugh JF.** *Environ Sci Technol.* 2019. Consensus Modeling of Median Chemical Intake for the U.S. Population Based on Predictions of Exposure Pathways.



## Endowments



We hope you're having a great Spring so far!

Our endowment funds provide stipends to graduate student and postdoc members who display outstanding accomplishments in Biological Modeling, your contributions have tremendously impact on the career development of next generation of biological modelers.

If you could support our BMSS Endowment Fund that are individually linked to the BMSS awards program: the Perry J. Gehring fund, the Andersen/Clewel Trainee Award Fund , and the John Doull fund by making a donation and then sharing it with your network, we would greatly appreciate it.

We encourage you to contribute to our endowment funds.

Contributing is easy!

[LEARN MORE](#)





## We need your help!

### Help! I Need a Name!

Hello, I am the new BMSS mascot. As you can see from my name tag, I am currently nameless. I need your help in coming up with a fun and creative name. Please help me out by submitting a suggestion for a name to [bmss.mascot@gmail.com](mailto:bmss.mascot@gmail.com). If I like your suggestion best, I will add it to my name tag and send you one of the new BMSS lapel pins.



### Come Join!

Please note that even if you are not an officer, there are many opportunities to be involved in the BMSS's committees (e.g., Programs, Membership, Newsletter, Website, social media). We appreciate your active involvement in our BMSS and ask you to consider running for office next election.

**We are looking for volunteers who are willing to contribute to selecting the paper of the year for BMSS best paper award!**

Please contact [Andy](#) if you are interested in becoming a review team.



## Session proposals

While we were unable to meet and share our exciting research in person this year, it is time to think about what to do for next year's SOT Annual Meeting in Orlando, Florida. SOT is now open to accept Scientific Session and CE course proposals and the deadline is fast approaching (June 12, 2020). BMSS strongly encourages you to submit timely, stimulating, and impactful proposals in biological modeling, computational toxicology, and related areas. We are sure many of you will identify BMSS as one of the sponsors for your proposals.

If you have a good idea but are unsure about how it may be viewed by the SOT and BMSS, we encourage you to share your idea with the BMSS proposal review committee who may help to further solidify the idea and make it a competitive proposal. Please submit your proposals or any related questions to [BMSSreviews@gmail.com](mailto:BMSSreviews@gmail.com) by **May 29, 2020 the latest**.

We look forward to reviewing your proposals in the coming weeks and in the meantime wish you safe and healthy.



Sponsored  
by us

## SOT 2020 webinar

Just a quick reminder on our upcoming sponsored free SOT 2020 webinar.

**Tuesday, June 16**

**12:00 Noon to 2:45 PM (ET)**

### **New Data and Tools for Understanding Chemical Distribution *In Vitro***

**Chairs:** Nynke Kramer, Universiteit Utrecht; and John Wambaugh, US EPA.

**Introduction.** Nynke Kramer, Universiteit Utrecht, Utrecht, Netherlands.

**A Comparison of Kinetic Model Predictions and Analytically Determined Distribution of Test Chemicals in 2D, Sandwich and 3D, Spheroid Hepatocyte Models.** Nynke Kramer, Universiteit Utrecht, Utrecht, Netherlands.

**Biokinetic Modeling of In Vitro Systems for Toxicity Testing and Risk Assessment.** Ciaran Fisher, Certara UK Limited, Sheffield, United Kingdom.

**Tox21 Partnership on In Vitro Dispositions: Initial Results.** David Crizer, NIEHS/NTP, Research Triangle Park, NC.

**From The Influence of In Vitro Disposition and Toxicokinetics on the Association of In Vitro Bioactivity and In Vivo Toxicity Data.** Gregory Honda, US EPA/NCCT, Research Triangle Park, NC.

[\*\*REGISTER NOW\*\*](#)



# Virtual Reception & Guest Speaker

With the health and safety of our attendees and community in mind and more uncertainty on the horizon due to the COVID-19 pandemic, the SOT canceled our annual meeting. We are hosting our meeting event online. Please look for the BMSS news broadcast for the link.

**May 27th, 2020 12PM-1PM EST**

## **Part 1. BMSS Virtual Reception (12:00-12:20)**

A townhall meeting of BMSS business which replaces the BMSS reception at SOT meeting due to cancellation.

## **Part 2. SIR Modeling of COVID-19 transmission (12:20-13:00)**

**Benjamin Lopman, PhD**

Professor, Department of Epidemiology  
Rollins School of Public Health  
Emory University



Abstract: Mathematical models of infectious diseases are mechanistic representations of the disease transmission process. Never before have infectious disease models and the scientists who develop them received as much attention and scrutiny as now -- during the current Covid-19 pandemic. These models have been central to policy makers and the public's understanding – as well as misunderstanding – of the pandemic. I'll review what infectious disease models are, talk about some of the most influential Covid-19 models and why it is so hard to forecast infectious disease dynamics.

# Meet our 2020-2021 officers!

Please welcome the officers named below to their new roles! Each year in May, the previous President becomes the Past President Councilor, the previous Vice President becomes President, the previous Vice President Elect becomes Vice President, and the previous First-year Councilor becomes the Second-year Councilor. The Secretary-Treasurer serves a two-year term and is elected in even-numbered years. All other offices are filled each year through a nomination and election process. Your BMSS officers will serve in the roles listed below from May 2020 through April 2021.



## President

### Andy Nong

Computational Toxicology Laboratory  
Environmental Health Sciences and Research Bureau  
Health Canada  
Ottawa, ON, Canada  
Email: andy.nong@canada.ca



## Vice-President

### Qiang Zhang

Gangarosa Department of Environmental Health  
Rollins School of Public Health  
Emory University  
Atlanta, GA, USA  
Email: qiang.zhang@emory.edu



## Vice-President Elect

### Patricia Ruiz

Computational Toxicology and Methods Development Lab  
Agency for Toxic Substances and Disease Registry  
Centers for Disease Control and Prevention  
Atlanta, GA, USA  
Email: pruiz@cdc.gov

# Meet our 2020-2021 officers!



## **Secretary-Treasurer**

### **Miao Li**

National Center for Toxicological Research  
U.S. Food and Drug Administration  
Jefferson, AR, USA  
Email: [miao.li@fda.hhs.gov](mailto:miao.li@fda.hhs.gov)

## **Past President**

### **Brad Reisfeld**

Department of Chemical and Biological Engineering &  
School of Biomedical Engineering &  
Colorado School of Public Health  
Colorado State University  
Fort Collins, CO, USA  
Email: [brad.reisfeld@colostate.edu](mailto:brad.reisfeld@colostate.edu)



## **First-year Councilor**

### **Lisa Sweeney**

ProSource360 Consulting Services  
Assigned to the 711th Human Performance Wing  
Wright-Patterson Air Force Base, OH, USA  
email: [LMSweeney3970@gmail.com](mailto:LMSweeney3970@gmail.com)

## **Second-year Councilor**

### **Dustin Kapraun**

Center for Public Health and Environmental Assessment  
Office of Research and Development  
U.S. Environmental Protection Agency  
Research Triangle Park, NC, USA  
Email: [kapraun.dustin@epa.gov](mailto:kapraun.dustin@epa.gov)



# Meet our 2020-2021 officers!



## Postdoc Representative

### **Yi-Hsien Cheng**

Institute of Computational Comparative Medicine (ICCM)  
Department of Anatomy and Physiology  
College of Veterinary Medicine  
Manhattan, KS, USA  
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## Student Representative

### **Michel Bteich**

Centre de Recherche en Santé Publique (CReSP)  
Université de Montréal  
Montréal, QC, Canada  
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## Interweb and Social Media

Please stay tuned for our new updated website!

(<https://www.toxicology.org/groups/ss/BMSS/>)

Follow us on:

 Twitter (<https://twitter.com/sotbmss>)

 LinkedIn(<https://www.linkedin.com/in/sotbmss>)