



Molecular and  
Systems  
Biology  
Specialty  
Section

## News from the Molecular & Systems Biology Specialty Section

### President's Message



#### Hello MSBSS Members

I am very pleased to update you on the various activities of the MSBSS, as we embark into 2017! As we all know, molecular and systems biology approaches to toxicology and human diseases are gaining more ground. These concepts are transforming current diagnostic and therapeutic approaches to medicine. Together with new innovative technologies, these approaches will enable a predictive and preventive medicine

that will lead to even greater strides in personalized medicine. I am sure that there will be further advances molecular and systems biological approaches in the coming years, and this will help us provide innovative solutions to problems in Toxicology, in relation to human diseases.

The annual SOT meeting is just round the corner, and in this newsletter, I would like to give you an update on the activities of our Specialty Section this past year. I am pleased to report that, under the leadership and support of our Vice President, Dr. Marc Gillespie, we have a number of symposia, Workshops, and CE courses for which MSBSS is the primary, secondary or tertiary sponsor. We had a highly successful CCT workshop entitled, "Toxicoepigenetics: The Interface of Epigenetics and Risk Assessment" that was organized by our VP-Elect, Shaun D. McCullough, was held in Tysons, VA, November 2-4, 2016.

Graduate student and postdoctoral support are one of the major missions of MSBSS. Activities available to trainees are outlined on page 6. The 2017 graduate student and postdoctoral awards are listed on page 3 of the newsletter. The 2017 MSBSS best paper awardees are Dr. Marpe Bam and colleagues. I congratulate all the winners, and thank Marc Gillespie, Richard Paules, Jill Franzosa and other volunteers who helped review the numerous nominations for these awards!

Our postdoc representative, Dr. Bhavesh Ahir with help from our other colleagues, has organized a Mentoring Luncheon during the annual meeting (cosponsored by SOT's CRAD), that I am sure will be a huge success. Our trainees will also participate in other activities at this year's meeting, including Chat With An Expert", the Tox Show Down, and the Student/Postdoctoral Scholar mixer.

I soon will be Past President, and would like to take this opportunity to thank all the MSBSS officers for their help and guidance. I am so proud of the highly dedicated team we have! My special thanks to our secretary/Treasurer Rob DeWoskin and our Past President Kristie Willet for her help and guidance! Finally, I invite you all to attend the 2017 MSBSS annual reception Wednesday, March 15, 6 pm-7:30 pm in Baltimore! *Bhagavatula Moorthy*

#### 2016-2017 Officers

##### **President**

Bhagavatula Moorthy  
Baylor College of Medicine

##### **Past President**

Kristie Willett  
*University of Mississippi*

##### **Vice President**

Marc E. Gillespie  
*St. Johns University*

##### **Vice President-Elect**

Shaun D. McCullough  
*U.S. EPA*

##### **Secretary-Treasurer**

Rob DeWoskin  
*etioLogic, LLC*

##### **Councilors**

Richard S. Paules  
*NIEHS*

Jill Franzosa  
*US EPA*

##### **Student Representatives**

Derik Haggard  
*Oregon State University*

Emma Bowers  
*University of North Carolina*

##### **Postdoctoral Representative**

Bhavesh Ahir  
*University of Illinois at Chicago*

#### Table of Contents

2017 MSBSS Sponsored Sessions; Election Results.....2	MSBSS Sponsors Toxicoepigenetics CCT Meeting.....6
2017 Graduate Student and Postdoctoral Fellow Awards....3	Treasurer's Report.....7
Graduate Students & Postdoctoral Member Activities....4-5	MSBSS Endowment; 2018 Meeting Proposals.....8
2017 Paper of the Year Award.....6	2017 Annual Reception, MSBSS Mission and Website...9

## MSBSS Sponsored Symposia and Workshops for 2017

The MSBSS is the primary sponsor of three symposia, a workshop, and an Informational Session, at the upcoming 2017 Annual Meeting, as well as a secondary or tertiary sponsor of several additional symposia, workshops and continuing education courses. We wish to thank the chairs, co-chairs and speakers in these sessions.

### Sponsored Symposia:

1. miRNAs As Translational Biomarkers of Kidney Injury
2. Quantitative Systems Toxicology for Chemical Safety Assessment
3. Translational Control in Disease Progression and Xenobiotic-Mediated Toxicity

### Sponsored Workshop:

1. Data Standardization Across 'Omic Platforms in Regulatory Toxicology

### Informational Session:

1. Bioinformatics Tools for Accelerated Hypothesis Generation and Mechanistic Insights

## 2017 Election Results for MSBSS Officers New Terms Begin May 1, 2017

We are very pleased to inform our membership of the results of the 2017 MSBSS election. Thanks to all who participated as candidates this year. Our new officers are:

Vice President-Elect - Dana C. Dolinoy, PhD

Secretary/Treasurer - Rob DeWoskin, PhD

Junior Councilor - Tamara Tal, PhD

Postdoctoral Representative - Karilyn E. Sant, PhD

Junior Graduate Student Representative - Katelyn Lavrich, BS

Want to learn more about MSBSS leadership positions? You can find detailed information on officer duties at: <http://www.toxicology.org/groups/ss/MSBSS/duties.asp> and in our bylaws at: <http://www.toxicology.org/groups/ss/MSBSS/bylaws.asp> You can also contact current officers in positions of interest, if you have any questions. **Those of us who have served on the MSBSS leadership have truly found it to be a fun and rewarding experience!**

### OFFICER TERMS

Vice President-Elect (three years – VP-Elect, VP, Pres; one year as past-Pres)

Junior Councilor (two years, becomes the Senior Councilor in year 2)

Secretary/Treasurer (two years)

Postdoctoral Representative (one year)

Graduate Student Junior Representative (two year term, becomes the Senior Rep in year 2)

## ***2017 Graduate Student and Postdoctoral Fellow Awards***

Highlights of MSBSS' annual reception are the graduate student and post-doctoral fellow awards that recognize excellence in research. These awards are supported by our endowment fund (see page 7), and provide an excellent opportunity for our students and postdocs to enhance their careers, and contribute to the quality of our specialty section. Below are the 2017 Awardees and the titles of their winning research.

### **2017 Graduate Student Award Recipients**

**1<sup>st</sup> Place: Elizabeth (Liz) Mutter-Rottmayer, University of North Carolina-Chapel Hill, Advisor-Cyrus Vaziri.** *"Defining a cancer cell-specific mechanism of resistance to Topoisomerase I poisons."*



**2<sup>nd</sup> Place: Gloria Garcia, Oregon State University, Advisor-Robert L. Tanguay.** *"AHR-dependent control of gene expression: in vivo characterization and transcriptome profiling of a conserved long-noncoding RNA."*

**3<sup>rd</sup> Place: Amin Sobh, University of California- Berkeley, Advisor-Chris Vulpe.** *"Genome-wide CRISPR-Cas9 Screens Identify Genes Involved in Toxic Responses to Arsenic and Acetaldehyde."*



### **2017 Postdoctoral Award Recipients**



**1<sup>st</sup> Place: Sarah Lacher, University of Minnesota, Advisor-Matthew Slattery.** *"Toxicogenomic mapping of disease-associated genetic variation links polymorphic antioxidant response elements to neurodegeneration."*

## *MSBSS Commitment to Trainees*

The Molecular & Systems Biology Specialty Section welcomes student involvement and also encourages students to apply for graduate student and post-doctoral fellow awards given at the SOT annual meeting. Each year monetary awards and plaques honor trainees for outstanding research in molecular and systems biology. For further information on awards, activities, and interests of MSBSS, please contact your student representative:

**Emma Bowers:** [ecbowers@email.unc.edu](mailto:ecbowers@email.unc.edu)

or consult the **MSBSS Website:** <http://www.toxicology.org/groups/ss/MSBSS/index.asp> or the **SOT award listings at:** <http://www.toxicology.org/ai/af/awards.aspx>

## *MSBSS Graduate Student and Postdoctoral Member Activities for the 2017 Annual meeting*

The annual meeting offers a variety of opportunities for career development, networking, education, and (of course) fun! Some of these events, many of which are coordinated by the Graduate Student Leadership Committee (GSLC), are described below.

- The MSBSS 3rd annual Mentoring Luncheon for Trainees\* will be held at Fogo de Chão on Wednesday, March 15th. This event brings together students, postdocs, and mentors in MSBSS-related fields to facilitate networking and career development. In addition to the MSBSS General Fund, the SOT Career Resources and Development Committee (CRAD) provides matching funds to sponsor this year's exciting event.
- "Chat with an Expert" and poster tours give trainees the opportunity to meet with experts and learn from their insight. "Chat with an expert" is a private meeting scheduled ahead of time (see webpage- sign-ups coming in February!) that facilitates a mentor-mentee dialogue. Poster tours are scheduled during the annual meeting on a first-come-first-served basis and involve an "expert" guiding a group of trainees through posters in their particular field.
- Tox ShowDown is an engaging quiz game with questions concerning toxicology as it relates to society, history, arts, and culture. Expert toxicologists put their knowledge to the test and competed against other experts for various prizes.
- The Student/Postdoctoral Scholar Mixer is held each year to provide an opportunity for trainees to build valuable relationships with colleagues and learn more about their experiences, and introduce attendees to the various Specialty Sections, Regional Chapters, and Special Interest Groups in the society.

\* If you would like to attend the mentoring luncheon, please sign up using the following link: <https://goo.gl/forms/WVbwSXkSHpKATRG11>. Space is limited and this event fills quickly. If this event is full, consider you can still enjoy the company of colleagues and mentors at the annual MSBSS reception on March 15 (see page 9).

***MSBSS Trainees: Don't forget to include these activities in your SOT 2017 Annual Meeting schedules!***

**Sunday, March 12, 8:00-5:00 PM** – Sunday Undergraduate Education Program

**Sunday, March 12, 6:30-7:30 PM** – Welcome Reception

**Sunday, March 12, 7:30-9:00 PM** – Student/Postdoctoral Scholar Mixer (Ticket Required)

**Monday, March 13, 11:30-1:00 PM** - *In Vitro* Toxicology Lecture and Luncheon for Students (Ticket Required)

**Monday, March 13-Thursday, March 16 Time Varies** - Chat with an Expert and Poster Tours for Trainees; Trainee Discussion with Plenary Presenters or Medical Research Council (MRC) Lecturer (Ticket Required)

**Tuesday, March 14, 7:00 AM** – Past Presidents' 5K Fun Run/Walk

**Tuesday, March 14, 12:00-1:15 PM** - Postdoctoral Assembly (PDA) Luncheon (Ticket Required)

**Tuesday, March 14, 1:20-2:40 PM** – Career Exploration Through Speed Informational Interviews

**Tuesday, March 14, 3:30-4:45 PM** - Undergraduate Student Meeting

**Tuesday, March 14, 7:30-9:00 PM** - Tox ShowDown

**\*Wednesday, March 15, 12:15-1:15 PM**– MSBSS Mentoring Lunch, 12:15 - 1:15 PM at Fogo de Chão Brazilian Steakhouse (vegetarian options available)

**\* If you would like to attend, please sign up using the following link:**

**<https://goo.gl/forms/WVbwSXkSHpKATRG1l>** Space is limited and this event fills quickly, so don't wait to respond!

**Wednesday, March 15, 5:00-6:20 PM** – Mastering Soft Skills to Advance Your Scientific Career

**Awards and Fellowships**

In addition to the awards offered by MSBSS, SOT provides numerous opportunities to recognize outstanding student and postdoctoral trainees and assist with travel to the annual meeting. Please visit <http://www.toxicology.org/AI/AF/awards.aspx> for further instructions and eligibility.



## *Join us in Congratulating the 2017 Paper of the Year Awardees!*

### *2017 MSBSS Paper of the Year Award*

Congratulations to the fourth annual MSBSS Paper of the Year Award winner. This year's award goes to Dr. Marpe Bam and coauthors from the University of South Carolina. The paper titled "Dysregulated Immune System Networks in War Veterans with PTSD is an Outcome of Altered miRNA Expression and DNA Methylation" (DOI: 10.1038/srep31209) was published in a 2016 Scientific Reports. Congratulations Dr. Bam, and thanks to all MSBSS members who submitted articles. We value your contributions to our discipline!



### *MSBSS Sponsored a Toxicoepigenetics CCT Meeting November 2-4, 2016*

The last two SOT Annual Meetings have featured symposia, workshops, and continuing education courses on toxicoepigenetics, organized by SOT Molecular and Systems Biology Specialty Section (MSBSS) Vice President-Elect Shaun D. McCullough, PhD, US Environmental Protection Agency (US EPA) and University of North Carolina at Chapel Hill, and Dr. Dolinoy. Realizing the interest and enthusiasm of the toxicology community, but also the need for communication between specialties, they developed an SOT Contemporary Concepts in Toxicology (CCT) meeting "Toxicoepigenetics: The Interface of Epigenetics and Risk Assessment," was held November 2-4, 2016, in Tysons, Virginia. "The goal of this meeting is to bring basic researchers and risk assessors together in the same room and to provide the venue for a collaborative discussion on how these two communities can work together to address critical questions in the field," says Dr. McCullough. The site for the meeting is:

<http://www.toxicology.org/events/shm/cct/toxicoepigenetics.asp>

An interesting article (<http://toxchange.toxicology.org/p/bl/ar/blogaid=2008>) is also available on the ToXchange Communicate Blog by Anthony M Franchini and Emma Bowers who discuss the emerging field of toxicoepigenetics, and how "environmental exposure-induced changes to the epigenome can serve as both a mechanism of underlying exposure effects and a biomarker of both exposure and susceptibility".

## Treasurer's Report

The MSBSS financial statements for the general fund and the endowment funds are presented below. Our specialty section is in good financial standing with sufficient funds to support our meeting and award activities in 2017.

### MSBSS Financials (3<sup>rd</sup> quarter - as of September 30, 2016)

	Dollar Amount
<b>Net Assets at Beginning Period</b>	<b>\$ 43,179</b>
<b>Income:</b>	
CCT Mtg:MiRNA	\$500
Registration	None this quarter
Membership Dues	None this quarter
Interest	N/A this quarter
<b>Total Income</b>	<b>\$500</b>
<b>Expenses:</b>	
Sponsoring of the Toxicogenetics CCT meeting	\$6,000
<b>Total Expenses</b>	<b>\$6,000</b>
<b>Revenue over expense</b>	<b>(\$5,500)</b>
<b>NET Assets End of Period</b>	<b>\$37,679</b>

The MSBSS Endowment Fund financial statement as of September 2016 is below showing a net gain of \$968. Contributions and interest on this fund's capital base are used to support our student and postdoc awards and activities in 2017. All of us in MSBSS heartily thank the endowment donors in 2016 for helping to keep this fund viable and growing!!

### Endowment Fund

	Dollar Amount
<b>Net Assets Beginning of Period</b>	<b>\$ 40,480</b>
Contributions	0
Interest and Dividends	\$308
Gain/Loss	\$659
<b>TOTAL RETURN</b>	<b>\$968</b>
No expenses this period	0
<b>Total Expense</b>	<b>\$0</b>
Revenue over expenses	\$968
<b>Net Assets End of the Period</b>	<b>\$41,448</b>

## ***HERE'S HOW YOU CAN QUINTUPLE YOUR DONATION!!***

### ***The MSBSS Endowment Matching Contribution Program***

YES, your contributions will be quintupled by “matching programs” from both SOT and MSBSS’ general fund. SOT will match your contribution at a 1:1 ratio, and MSBSS will also match at 3:1. For example, your \$100 donation to the MSBSS endowment fund will be matched with \$100 from SOT and another \$300 from MSBSS’ general fund yielding a whopping total of \$500 to our endowment fund! These funds are used to support our graduate and postdoctoral students, so give today and help our MSBSS grow and prosper. Don’t pass up this tremendous opportunity to help fund our next generation of researchers, and to reward excellence in our graduate students, post-docs, and published research.

***\*\*\*\*\*See the Page 3 for the Awards Supported by this Fund\*\*\*\*\****

### ***Planning Ahead - MSBSS Review of Proposals for SOT 2018***

**Did you know that proposals for the annual SOT 2018 meeting are due by mid-May, soon after the 2017 meeting?** So it’s not too early to be thinking about what you might like to present. You can see what presentations there may be on your topic of interest at this year’s 2017 meeting, and will also have the opportunity to meet colleagues at the 2017 meeting, who you may not otherwise get to see very often face-to-face, to discuss your ideas for a 2018 session.

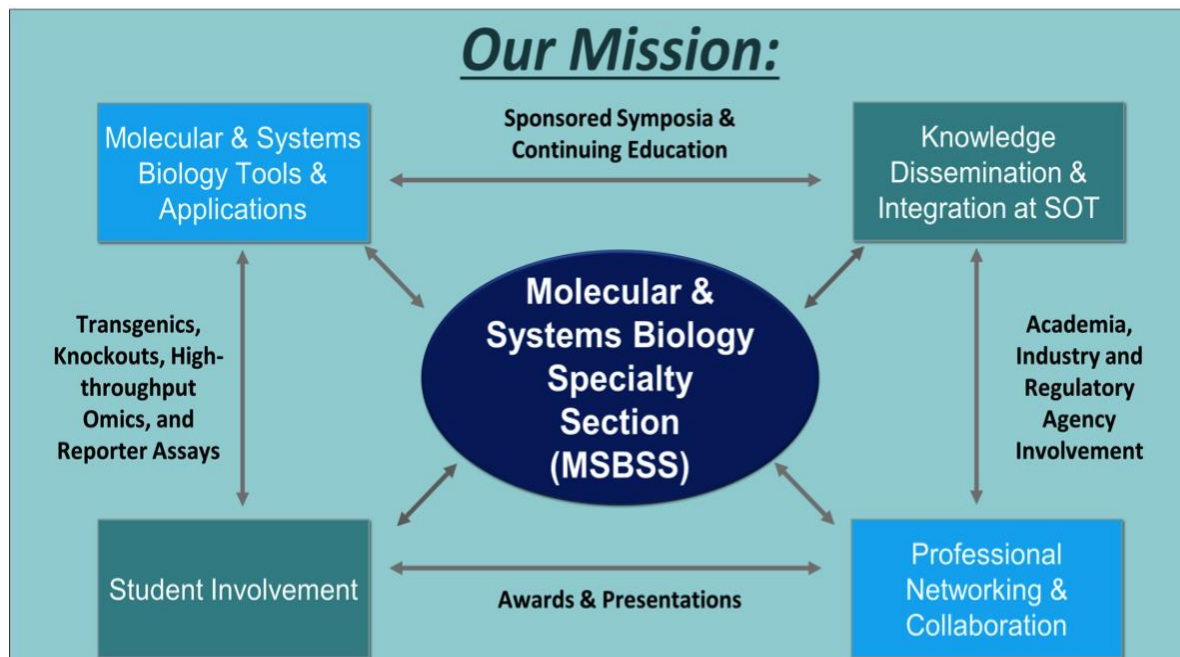
If you have an idea for an innovative session you would like to propose for the 2018 meeting agenda, your MSBSS officers are available to provide suggestions and assist you with the development and sponsorship of your proposals. This practice has proven invaluable over the past few years to your session being accepted by the Program Committee. A winning symposium/workshop/CE course does not depend on the seniority of the co-chairs, and we encourage junior faculty members to participate as co-chairs. We also encourage students and post-docs to communicate with the MSBSS officers to develop their ideas. If you would like the MSBSS officers to review your proposal, send your submission well before the May submission date to the MSBSS VP (Marc Gillespie, [gillespm@stjohns.edu](mailto:gillespm@stjohns.edu)) or VP Elect (Shaun McCullough, [mccullough.shawn@epa.gov](mailto:mccullough.shawn@epa.gov)). This will allow sufficient time to review and provide comments on your proposal prior to submission.

For more information on submitting proposals, go to:  
<http://www.toxicology.org/events/am/sciProgram.asp>



## *See You Soon at the 2017 MSBSS Annual Reception in Baltimore*

This year's annual MSBSS reception will be held on **Wednesday, March 15, from 6:00 pm to 7:30 pm at the Hilton Baltimore in the Key Ballroom 11.** This is also listed in the Annual Meeting program and on the SOT app for this year's meeting. We look forward to seeing you!



For more information about our specialty section, please visit our web site at:

<http://www.toxicology.org/groups/ss/MSBSS/index.asp>