

NAME OF SPECIALTY SECTION: Biological Modeling

## **ANNUAL REPORT: 2005-2006**

May 1, 2005 to April 30, 2006

### **I. Officers/Committees:**

<b>Officers:</b>	<u>2005-2006</u>	<u>2006-2007</u>
President:	Alan Wilson	Charles Timchalk
Vice President:	Charles Timchalk	Sean Hays
Vice President-elect:	Sean Hays	Craig Zwickl
Secretary:	Elaina Kenyon	Bradford Gutting
Treasurer:	Elaina Kenyon	Bradford Gutting
Councilors:	Jeff Gearhart	Cecilia Tan
	Lisa Sweeney	Jeff Gearhart
<i>Past-President</i>	John Frazier	Alan Wilson
Student Representative:	Rebecca Clewell	Rebecca Clewell

### **II. Activities**

**2006 SOT Annual Meeting Reception** was held March 8<sup>th</sup> at the San Diego Convention Center, San Diego, CA. Approximately 40 people were in attendance. Sean Hays called the meeting to order at ~6:00 PM on March 8<sup>th</sup>.

Meeting Minutes from Specialty section April 4<sup>th</sup> Conf call: see Attachment I

Awards: In 2005-2006, 3 student awards were presented for best student abstracts. The award winners were:

**Michael S. Breen**, *Chemically-Induced Skin Irritation: Computational Model of Intracellular Signaling Pathways that Mediate Inflammatory Response.*

**Julia M Gohlke**, *Elucidation of a Gene Regulatory Network for Forebrain Development using Bioinformatics Approaches for the Analysis of Compiled Microarray Datasets.*

**Ahmad Mirfazaelian**, *Development of a Physiologically Based Pharmacokinetic Model for Deltamethrin in Adult and Developing Sprague-Dawley Rats.*

The success of our student awards program has been dependent upon the generous contributions of our sponsors. The BMSS would like to again thank LeadScope, Taylor and Francis and AEgis Technologies for their continued sponsorship of BMSS student awards.

The current BMSS membership is 96 full members and 14 students.

In 2006-2007 the BMSS will be working to engage the membership to increase their activity with the specialty section. Goals include the establishment of an ongoing program committee to proactively develop SOT and solicit symposium, workshops and continuing education classes for the annual meeting. An effort is underway to increase membership and have a greater engagement of our students in BMSS activities.

## Attachment I.

### Notes from BMSS teleconference April 4, 2006.

#### Participants:

Charles Timchalk  
Alan Wilson  
John Frazier  
Sean Hays  
Jeff Gearhart  
Bradford Gutting  
Craig Zwickl  
Cecilia Tan  
Lisa Sweeney

#### Not Present:

Elaina Kenyon  
Rebecca Clewell

#### - Opening remarks by Dr. Alan Wilson (BMSS President 2005-2006)

Alan began by thanking everyone for their efforts over the past year and noted that it was a productive year for the BMSS. He thanked everyone for stepping in at the San Diego meeting in his absence. Alan also stated the need for the BMSS to continue recognizing sponsors and continuing to contribute to the growth of the BMSS. He also recognized the election of the Student Representative to the BMSS this past year. Dr. Wilson concluded by saying that an effort over the next year should be to continue to bring new members to the BMSS and get more people involved.

#### - Secretary/Treasurer Report and Transition Plan

There was no treasurer report presented because Dr. Elaina Kenyon was not able to attend the teleconference. An action item for the new treasurer/secretary, Bradford Gutting, and Chuck Timchalk is to work with Elaina over the next couple of weeks to transition the treasurer reports and business.

#### - Review of SOT Annual Meeting (San Diego) by Sean Hays (VP-Elect)

Sean reviewed the details of the BMSS meeting in San Diego. Sean noted that at the meeting:

- student awards were given
- treasurer report was given
- Dr. Mel Anderson gave a fantastic talk on biological modeling
- new BMSS members were introduced
- it was also mentioned that BMSS should consider tag-teaming with the risk assessment specialty section on quantitative seminars (**Alan** is to follow up)
- Sean suggested the BMSS should look into giving BMSS student poster Award -ribbons
- a little under 40 people attended the BMSS meeting

- Sean also noted that the BMSS meeting at the national SOT should not coincide with the risk assessment specialty section meetings
- Sean also discussed the upcoming PBPK workshop to be held at the end of OCT/early NOV timeframe. There will be a list of invitees as well as spaces for others (depending on the capacity of the room). Sean will send announcements when available.

- Discussion of upcoming year led by Chuck Timchalk

Chuck noted the April 30, 2006 deadline for submitting Workshop, Symposium and/or Continuing Education classes for the 2007 SOT and asked if anyone had ideas they wanted to submit. A general discussion involving topics and the general protocol for getting approval followed. **Chuck will** send an email, via the SOT office, to the specialty section members regarding topics and interest in holding BMSS-sponsored Workshops, Symposiums and/or Continuing Education classes at the 2007 National SOT meeting.

Chuck led a discussion on tasking BMSS member responsibilities during the next year. These tasks included overseeing the awards (usually led by the VP Elect), Corporate Sponsorship (usually led by the VP Elect), and logistics at the annual meeting (usually done by the Secretary/Treasurer). There was a discussion identifying what needed to be done and assigning/identifying responsible people as early as possible to prevent any last minute rush. Jeff Gearhart suggested generating a list of items that needed to be addressed. Action item: **Chuck will prepare** a list and send out prior to next conference call.

Chuck highlighted the need to communicate with our members within SOT, as well as others outside of SOT (cross-disciplines outreach). Increased communication could be through the website, with updated BMSS meeting minutes. In addition, an updated website and periodic emails to members could increase interactions about BMSS activities.

Chuck asked everyone to go to the website and review the bylaws and individual BMSS officer responsibilities (I have attached this to these minutes).

Finally, Chuck mentioned that the officer transition occurs at the end of the month and that the next BMSS officer meeting should be held in early May. Craig Zwickl suggested that a list, with contact information, for BMSS officers should be generated and sent out.

BMSS Bylaws from the SOT website.

## **ARTICLE I - NAME**

The name of this organization shall be the "BIOLOGICAL MODELING" Specialty Section of the Society of Toxicology hereinafter designated at the "BIOLOGICAL MODELING" Specialty Section.

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## **ARTICLE II - OBJECTIVES**

The objectives of the "BIOLOGICAL MODELING" Specialty Section are:

To serve as the focal point for interaction of members of the Society of Toxicology interested in "BIOLOGICAL MODELING" toxicology.

To develop, propose, and conduct programs and educational activities that emphasize the latest developments in "BIOLOGICAL MODELING" toxicology.

To relate those developments to the activities of the Society of toxicology and to stimulate new growth in "BIOLOGICAL MODELING" toxicology as it relates to the science of toxicology.

To act as a resource to the Society in the area of the Section's interest.

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## **ARTICLE III - MEMBERSHIP**

All members in good standing of the Society of Toxicology shall become members of the "BIOLOGICAL MODELING" Specialty Section upon payment of Specialty Section dues. A member of the "BIOLOGICAL MODELING" Specialty Section will be dropped from membership if dues are not paid on an annual basis or if he or she is not a member in good standing of the SOT.

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## **ARTICLE IV - OFFICERS AND COUNCILORS**

The "BIOLOGICAL MODELING" Specialty Section Officers shall be President, Vice President, Vice President-Elect, and Secretary-Treasurer. There shall be three Councilors. The Vice President-Elect shall be elected annually and the Secretary-Treasurer biannually by the Specialty Section members. They shall serve until their successors are installed. Officers and Councilors shall take office on May 1.

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## **ARTICLE V - ELECTION OF OFFICERS AND COUNCILORS**

Section 1. The office of the Presidency shall be for a term of one year. The President, after serving one year, shall be designated immediate Past-President for one year. The President shall preside at all meetings.

Section 2. The Vice President shall become the President of the Specialty section after serving one year as Vice President. The Vice President shall serve in the absence of the President.

Section 3. A Vice President-elect shall be elected by a majority vote of the ballots cast, and shall become the Vice President of the Specialty Section after serving one year as Vice President-elect. The Vice President-elect shall serve in the absence of the President and Vice President.

Section 4. The Secretary-Treasurer shall be chosen by vote of the membership for a term of two years.

Section 5. There shall be three Councilors, who, together with the officers, will comprise the Executive Committee. One shall be elected each year. The third Councilor shall be the immediate Past President.

Section 6. A Nominating Committee consisting of not less than three members shall be appointed by the Executive Committee of the Specialty Section (i.e., the officers plus Councilors), within two months following installation of officers. The Committee shall provide a slate of candidates for each election.

Section 7. Elections shall be held annually by mail ballot. Ballots shall be sent to all SOT Members who have paid "BIOLOGICAL MODELING" section dues as of January 1 of the election year. The SOT will mail ballots and the costs will be charged to the "BIOLOGICAL MODELING" Section.

Section 8. In the event of a vacancy in the Presidency, the Vice President accedes to that office. Similarly, the Vice President-elect accedes to the office of the Vice President should that office become

vacant. A special election must be held to fill the Vice President-elect vacancy, but the Executive Committee may make an appointment to fill the vacancy until such time that an election can be conducted.

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## **ARTICLE VI - ADMINISTRATION**

Section 1. The Specialty Section shall be governed by the Executive Committee.

Section 2. The Executive Committee shall consist of the four elected officers plus the three Councilors. The President of the Section shall be the chairperson of the Executive Committee. Four members of the Executive Committee shall constitute a quorum for the transaction of business.

Section 3. The President will preside at all meeting of the Specialty Section and of the Executive Committee and shall perform such other duties as may be directed by the Executive Committee. In the President's absence, the Vice President shall act for the President.

Section 4. The Specialty Section shall comply with provisions for continued authorization by the Society of Toxicology.

The Specialty Section shall provide annual reports of the activities and finances for the current year as well as plans of programs, activities, and finances for the following year. Annual reports shall be submitted to the SOT Executive Director by August 31 of each year.

The SOT Council shall review annual reports and plans.

The SOT Committee shall consult with the Specialty Section as necessary concerning continued authorization of the Specialty Section. Society of Toxicology authorization shall be withdrawn from the Specialty Section if it fails to comply with the provisions for continued authorization. Specialty Section policy statements must be reviewed and approved by the Society of Toxicology in advance.

Section 5. The Secretary-treasurer shall pay authorized bills incurred by the Specialty Section as directed by the Executive Committee. Dues and all other funds will be collected and held by SOT for use exclusively by the Specialty Section. The successor to the Secretary-treasurer shall receive all property of the section following installation of office. The Secretary-treasurer shall record all transactions of all meetings of the Section and the Executive Committee, and shall be responsible for the correspondence of the Section, and shall maintain a list of members and their status.

Section 6. Any Specialty Section funds or other property remaining at the time of termination or abandonment or dissolution of the Section shall be turned over to the Society of Toxicology and shall become a part of the Society's general funds; no part of any such funds or property shall inure to the benefit of any member or officer of, or person associated with, the Section.

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## **ARTICLE VII - MEETINGS**

Section 1. Meetings shall be held at least annually and as dictated by the scientific and educational programs of the Section. The time and place of each meeting shall be established by the Program Committee and communicated to the membership at least two weeks before each meeting.

Section 2. Special meetings may be called by the president at any time with the approval of the Executive Committee or by presentation to the President of a petition signed by 20% of the membership in good standing.

Section 3. A quorum shall consist of 20% of the members in good standing.

Section 4. Executive Committee meetings shall be held at the discretion of the President provided that each of the members of the Committee is notified at least seven (7) days prior to the meeting.

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## **ARTICLE VIII - DUES**

Dues will be established and charged by the SOT Council.

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## **ARTICLE IX - COMMITTEES**

Section 1. The Vice President shall be the Chairperson of the Program Committee whose members are appointed by the Chairperson. The Program Committee shall develop scientific and educational programs consistent with the objectives of the Society of Toxicology "BIOLOGICAL MODELING" Specialty Section, and provide copies of the material to the Secretary-treasurer who will, in turn, notify the SOT Council prior to developing the program. The Program

Committee shall coordinate its activities with the SOT Program Committee and with other appropriate Specialty Sections.

Section 2. The President shall appoint other committees as required and shall automatically act as an ex-officio member of such committees. Members of such committees shall serve at the discretion of the President.

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## **ARTICLE X - AMENDMENTS**

Section 1. Amendments to these Bylaws may be presented by any member of the Specialty Section in good standing at any regular meeting of the Section or at any special meeting called for that specific purpose. They shall be presented in writing and shall be offered to the membership present at that meeting on motion for consideration and circulation to the membership. A simple majority shall be necessary to pass the motion.

Amendments accepted for future consideration and circulation shall be printed and circulated with a ballot to all members in good standing. A two-thirds affirmative vote of the ballots returned within 30 days shall be necessary for adoption of any amendment.

Section 2. Amendments to these Bylaws must be approved by the Council of the Society of Toxicology before they become effective. This is done to insure the Section that future changes in these Bylaws will have the same force as the original, which was so approved.

### **Objectives**

To provide a forum for the interaction of toxicologists and other professionals involved in Biological modeling.

To promote the application of Biological models in Risk Assessment.

To advocate the development of sound science-based guidelines for the development of Biological models.

To encourage exchange of information among members of the Society involved in Biological modeling.

To organize educational programs which emphasize new developments and issues in Biological modeling.

### **Purpose**

Historically, dose-response assessments have been conducted by correlating the incidence of response with exposure dose. However, since adverse effects, develop at the target tissues from the interaction

of the toxic moiety with cellular components, the default dose-response assessments fail to account for the fundamental toxicokinetic/toxicodynamic processes in a quantitative manner. Furthermore, most dose-response assessments are obtained from experiments performed in animal models. This requires to conduct various extrapolations (high dose to low dose, across species, and among exposure scenarios) which increase the uncertainty of risk.

Biological models allows the translation of exposure dose to tissue dose, to be done on sound scientific principles and avoid the "black box" approach used in the empirical methods of extrapolation. The development and use of quantitative, mechanistic models can reduce uncertainty in dose-response assessments, thereby lessening the gap between actual and predicted risk. Although in principle, their incorporation into the dose-response assessment process seems simple, the BMSS would facilitate such a process and provide a forum for the interaction and exchange of ideas among toxicologists and other professionals involved in biological modeling. In summary, the purpose of the BMSS is to integrate and promote the activities of members of the Society involved in the development and use Biological models.

### **Three-Year Plan**

Coordinate the organization meeting for the election of President, Vice-President, Vice-President Elect, two Councilors and the Secretary/Treasurer.

Organize workshops and symposia to promote discussion of research topics of mutual interest to members.

Name members willing to participate/contribute

Encourage exchange of information among modelers.

Develop library of Biological models

Propose standard operating procedures for the development of models

Identify chemicals and models that may be used as examples in the application of Biological models in Risk Assessment.

Setting appropriate timelines for completion of assigned tasks

Reporting the final recommendations for the session

### **2006 BMMS Officers:**

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